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March 24, 1944

OPENING ANNOUNCEMENT: We bring you now the first of the weekly spray service reports presented in cooperation with state and federal agencies and a number of fruit growers. And we'll give you the report by areas.

For Paducah-Henderson. Apples are prepink to pink. Sulphur fungicides should be applied for the prepink spray. Peaches are from 10 to 50 per cent in bloom with 70 per cent of the buds reported killed.

Carbondale-Vincennes-Louisville Area. Apples are prepink; aphids moderate to heavy; codling moth carry-over heavy. Dormant sprays may be applied on late varieties; sulphur fungicides for prepink sprays on early varieties. Peaches are 10 per cent in bloom with 10 per cent of buds reported killed.

Belleville-Hardin-Centralia Area. Apples are dormant to tip-green; aphids heavy; codling moth carry-over heavy. Apply dormant sprays; add nicotine sulphate for aphid control where necessary. Peach buds reported severely injured north of Hardin-Jerseyville.

Bedford-Lexington Area. Apples are tip-green to prepink; codling moth carry-over heavy. Apply dormant sprays on late varieties; sulphur fungicides for prepink sprays on early varieties. Peaches are tip-green to pink. No killing of buds reported.

Champaign-Lafayette Area. Apples are dormant. Apply dormant sprays. Peaches are tip-green; severe injury of buds reported.

Northern Illinois-Indiana Area. Apples are dormant. Apply dormant spray or dormant spray with D-N added for control of aphids and oyster shell scale.

CLOSING ANNOUNCEMENT: That concludes the first weekly spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Kentucky State Horticultural Society, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and Illinois State Natural History Survey.

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Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director.
Acts approved by Congress May 8 and June 30, 1914

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March 31, 1944

OPENING ANNOUNCEMENT: Here is the second weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

For the Paducah-Villa Ridge Area: Apples of late varieties are still prepink to pink. Weather is favorable to apple scab. Foliage should be protected by sulphur fungicides. Peaches are past full bloom at Paducah and 90 per cent in bloom at Villa Ridge.

For the area of Carbondale-Vincennes-Henderson-Louisville: Apples of late varieties are delayed dormant to prepink, with early varieties prepink to full pink. Fruit buds are light on some varieties. Weather is favorable to apple scab. Foliage should be protected by sulphur fungicides. Peaches are in full bloom at Henderson. Elbertas are 90 per cent in bloom at Carbondale. There is no bloom at Vincennes.

Belleville-Hardin-Centralia Area: Apples of late varieties are delayed dormant to early prepink. If warm weather prevails, the first scab spray should be applied April 7.

Bedford-Lexington Area: Apples of late varieties are green tip with early varieties prepink. Weather is favorable to apple scab. Foliage should be protected by sulphur fungicides. As for peaches, Golden Jubilee and South Haven are in the pink stage, with Elberta five per cent in bloom.

Peoria-Champaign-Lafayette Area: Apples are green tip. Dormant sprays may still be applied. Peaches are severely injured. Minimum temperature March 30 was 23 degrees.

Northern Illinois-Indiana Area: Apples are dormant. Apply a dormant spray for the control of aphids and oyster shell scale if necessary.

CLOSING ANNOUNCEMENT: That concludes the second weekly spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

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THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
JANUARY 1954

RESEARCH REPORT

BY
J. H. HARRIS
AND
J. E. HARRIS

RESEARCH REPORT

ON THE
KINETICS OF THE
REACTION OF
HYDROGEN PEROXIDE
WITH
HYDROGEN SULFIDE

IN AQUEOUS SOLUTION
AT 25°C.

CHICAGO, ILLINOIS

1954

CHICAGO, ILLINOIS

RESEARCH REPORT

ON THE
KINETICS OF THE
REACTION OF
HYDROGEN PEROXIDE
WITH
HYDROGEN SULFIDE

IN AQUEOUS SOLUTION
AT 25°C.

April 7, 1944

OPENING ANNOUNCEMENT: Here is the third weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

For the Paducah-Villa Ridge Area. Apple buds are full pink to early bloom. There has been some frost injury. Apply pink sulphur sprays. Peaches are past bloom. Frost has caused severe damage. Minimum temperature was 19 degrees.

For the area of Carbondale-Vincennes-Henderson-Louisville, Kentucky. Apples of late varieties are pink with early varieties approaching full bloom. There has been severe frost injury to Grimes at Vincennes. Minimum temperature was 19 degrees. Apply sulphur sprays on late varieties. Peach buds are from 5 to 100 per cent open. Elbertas are 40 to 70 percent killed.

For the Belleville-Hardin-Centralia Area. Apples of late varieties are delayed dormant to prepink. Sulphur sprays are necessary on most varieties. Add nicotine to sulphur sprays where necessary for aphid control. Peaches are about open at Belleville and early bloom at Alma. Only light frost damage reported.

For the Bedford-Lexington Area. Apples of late varieties are prepink to pink. Sulphur sprays will be needed on most varieties for scab control. Peaches are from full pink to early bloom. Minimum temperature 20 degrees at Lexington. Excellent crop prospect reported at Bedford.

For the Quincy-Pittsfield Area. Apples are delayed dormant to green tip. Aphids are abundant. Nicotine can be applied where necessary. Sulphur sprays may be needed by April 14 for scab control.

For the Peoria-Champaign-Lafayette Area. Apples of late varieties are green tipped with early varieties delayed dormant. Pre-pink sprays may be needed by April 14 for scab control.

For the Northern Illinois-Indiana Area. Apples are approaching delayed dormant. No sprays will be needed this week.

CLOSING ANNOUNCEMENT: That concludes the third weekly spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

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Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director.
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT

(From the Illinois State Natural History
(Survey and Extension Service in Agriculture
(and Home Economics, University of Illinois
(College of Agriculture

April 7, 1944

Listen to the spray service broadcast by your favorite station.

<u>STATION</u>	<u>LOCATION</u>	<u>KILO- CYCLES</u>	<u>DAY</u>	<u>TIME</u>	<u>IN CHARGE</u>
1-KFUO	St. Louis, Mo.	850	Friday	7:30 a.m.	E. Knoerschild
2-KMOX	St. Louis, Mo.	1120	Sunday	6:45 a.m.	Charley Stookey
3-WAOV	Vincennes, Ind.	1450	Wednesday	1:05- 1:20 p.m.	J. Richard Aker
4-WASK	Lafayette, Ind.	1450	Monday	6:00- 7:00 a.m.	Bayne A. Spring
5-WBAA	Lafayette, Ind.	920	Monday	12:00- 12:30 p.m.	Jim Miles
6-WBOW	Terre Haute, Ind.	1230	Monday	11:20 a.m.	Charles L. Brown
7-WGBF	Evansville, Ind.	1280	Monday or Tuesday	12:35 a.m. 12:45 p.m.	Mrs. Pat Roper
8-WGRC	Louisville, Ky.	1400	Saturday	11:35 a.m. 1:00 p.m.	C. M. East
9-WHAS	Louisville, Ky.	840	Saturday	11:30 a.m.	John F. Merrifield
10-WHBU	Anderson, Ind.	1240	Monday	11:15 a.m.	W. C. Haynes
1-WILL	Champaign-Urbana, Ill.	580	Monday	12:32 p.m.	Ted Mangner
2-WLBC	Muncie, Ind.	1340	Wednesday	11:07 a.m.	Hugh Harling
3-WLS	Chicago, Ill.	890	Tuesday	12:00 m.	Arthur C. Page
4-WLW	Cincinnati, Ohio	700	Mon., Wed. and Fri.	12:47 p.m.	Roy E. Battles
5-WMAQ	Chicago, Ill.	670	Monday	6:15 a.m.	Everett Mitchell
6-WMBD	Peoria, Ill.	1470	Tuesday	6:00 a.m.	"Farmer" Bill
7-WNAX	Yankton, S. D.	570	Tuesday	6:05 a.m.	George B. German
8-WOC	Davenport, Ia.	1420	Saturday	6:30 a.m.	John Fuhrman
9-WOWO	Fort Wayne, Ind.	1190	Monday	12:45 p.m.	Tom Wheeler
10-WSOY	Decatur, Ill.	1340	?	1:16 p.m.	T. H. Willhite

The attached map will help define area locations.

April 14, 1944

OPENING ANNOUNCEMENT: Here is the fourth weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

For the Paducah-Villa Ridge Area. Most apple varieties are full bloom. Foliage is developing rapidly. Cedar and quince rust is appearing. Spray blight-susceptible varieties with 2-4-100 Bordeaux and other varieties with five pounds wettable sulphur. Peaches are through blooming. First curculio sprays may be needed.

For the area of Carbondale-Vincennes-Henderson-Louisville, Kentucky. Apples of late varieties are prepink to pink with early varieties starting to bloom. Foliage is developing rapidly. Apply sulphur sprays for scab. Peach bloom is about over. First curculio sprays may be needed.

For the Belleville-Hardin-Centralia Area. Late varieties of apples are full pink and early varieties are approaching bloom. Apply sulphur sprays for scab. Peaches are about full bloom. Sulphur should be applied in the full bloom on varieties where blossom blight has been serious in past seasons.

For the Bedford-Lexington Area. Apples of late varieties are prepink to pink with early varieties about to open. Foliage is developing rapidly. Sulphur sprays should be applied for scab. Peach bloom is about over. The first curculio spray may be needed.

For the Quincy-Pittsfield Area. Apples of late varieties are prepink and early varieties pink. Sulphur sprays will be necessary for scab.

For the Peoria-Champaign-Lafayette Area. Apples are likely to advance to the prepink stage this week. As soon as any foliage is exposed in the buds, apply sulphur for scab.

For the Northern Illinois-Indiana Area. Apples are likely to advance rapidly this week. As soon as any foliage is exposed in the buds, apply sulphur for scab.

CLOSING ANNOUNCEMENT: That concludes the fourth weekly spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

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Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director.
Acts approved by Congress May 8 and June 30, 1914

Natural History Survey

April 21, 1944

OPENING ANNOUNCEMENT: Here is the fifth weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

Cool, rainy weather has prolonged tree development in Illinois, Indiana, Southwestern Ohio and Kentucky. Throughout the various fruit-growing areas mature scab spores have formed and are discharging. In Kentucky the first infection has appeared. In southern Illinois infection is expected to show by April 26. Codling moth pupation in the southern regions has advanced as high as 15 per cent. In general, pupation has not advanced much the past week. Curculio are scarce in peach orchards. Sprays or dusts are needed only if jarrings indicate that curculio are abundant where peaches have reached split-shuck stage.

For the Paducah-Villa Ridge Area. One-half the apple/ ^{crop} is reported at Paducah. Most varieties are through blooming. In Johnson County, Illinois, a light crop is in prospect with some center blossoms killed. Most varieties are in full bloom. Foliage should be protected with sulphur for scab through the calyx and first cover. The calyx spray will be needed over most of this area by April 29.

Peaches were severely damaged by freeze throughout the area. Shucks are splitting at Paducah with little fruit development north of Paducah. Curculio have not entered the orchards in numbers and no sprays or dusts for control are needed unless jarring records indicate a general movement of curculio into the orchards.

For the Carbondale-Vincennes-Henderson-Louisville, Kentucky Area. Apple bud development has been slow. Trees are from early bloom at Vincennes to full bloom at Henderson and Louisville with Duchess through blooming at Carbondale. A 15 per cent codling moth pupation is reported at Vincennes. Aphid predators are active. Most varieties will be in the calyx between April 21 and 29. Weather has been favorable to scab development, and sulphur sprays should be applied through the calyx and first cover to protect expanding foliage.

A good peach crop is still in prospect. Petals are off over most of the area. There has been little fruit development, and curculio sprays or dusts need not be applied until jarrings indicate a general movement of curculio into the orchards.

For the Belleville-Hardin-Centralia Area. Apples are pink to full bloom. Spray blight-susceptible varieties with 2-4-100 Bordeaux in early bloom. Due to a delay in bud development an extra sulphur spray may be necessary. As new foliage develops, it must be protected against scab infection.

Pears are in full bloom.

Peaches are from full to past bloom. Sulphur should be applied in full bloom on varieties where blossom blight has been serious in past seasons.

For the Bedford-Lexington and Southwestern Ohio Area. Apples are early pink to early bloom. Scab spore discharge heavy in southwestern Ohio. Weather has been favorable for infection over most of the area. One more sulphur spray will be needed before the calyx is applied. Where blossom blight has been serious in past seasons, spray susceptible varieties with 2-4-100 Bordeaux in the early bloom.

Peaches are from full bloom to petal fall. No curculio sprays are needed this week.

For the Quincy-Pittsfield Area. Apple varieties are all in the prepink stage. A light crop is reported on Golden Delicious and Grimes. Scab spores are mature and discharging. It is necessary to keep foliage protected with sulphur.

For the Peoria-Champaign-Lafayette Area. Apple varieties are prepink to early pink. Scab spores are mature and discharging. It is necessary to keep foliage protected with sulphur.

For the Northern Illinois and Indiana Area. Apples are likely to advance rapidly this week. As soon as any foliage is exposed in the buds, apply sulphur for scab.

CLOSING ANNOUNCEMENT: That concludes the fifth weekly spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

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April 28, 1944

OPENING ANNOUNCEMENT: Here is the sixth weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

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|--|---------------------------------|
| 1 - Paducah-Villa Ridge | 4 - Bedford-Lexington-S.W. Ohio |
| 2 - Carbondale-Vincennes-Henderson-
Louisville, Ky. | 5 - Quincy-Pittsfield |
| 3 - Belleville-Hardin-Centralia | 6 - Peoria-Champaign-Lafayette |
| | 7 - Northern Illinois-Indiana |

Apple development has been rapid over the entire area, with cool, wet weather very favorable to apple scab. New foliage must be protected by sulphur fungicides. Codling moth pupation in the southern regions has advanced as high as 70 per cent. Plum curculio have increased rapidly in peach areas and curculio sprays or dusts should be applied where jarring records indicate many adults. Outside rows of trees should be protected first.

For the Paducah-Villa Ridge Area: Apple petals are off. Calyx sprays are needed on all varieties this week. Sulphur should be included in calyx and first cover for scab. Seventy per cent codling moth pupation is reported at Princeton, Kentucky.

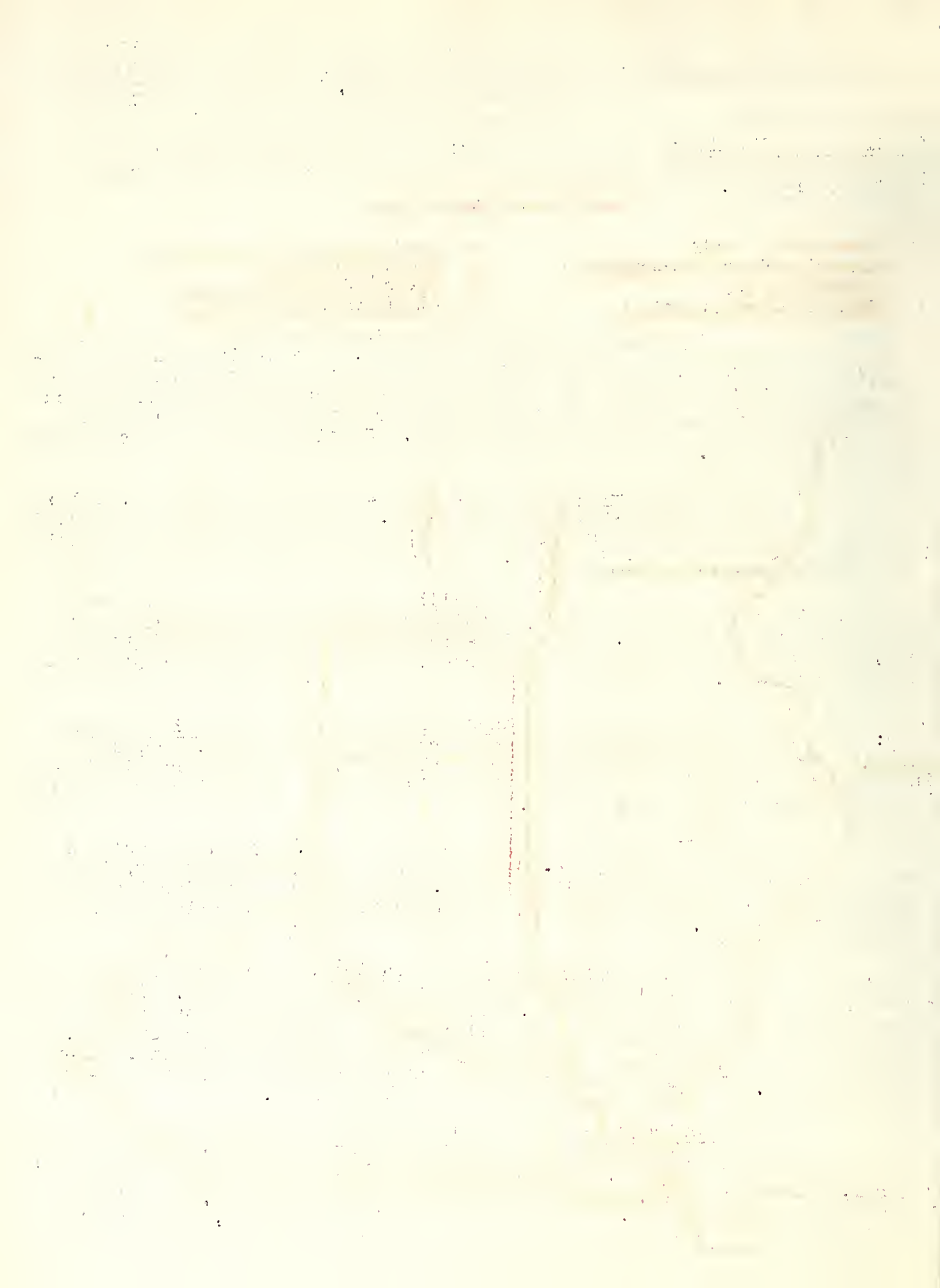
Peaches are growing rapidly, with shucks splitting or already dropped. Curculio numbers are increasing rapidly, with 80 per cent of females ready to lay eggs. Curculio sprays or dusts are needed this week, particularly on outer rows of trees. Treat as soon as jarring indicates abundance.

For the Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area: Apples are in full bloom at Henderson and Louisville, dropping petals at Vincennes and petals off at Carbondale. A calyx spray including sulphur for scab should be applied this week. Plan to include sulphur in the first-cover spray for scab.

Peaches are dropping their shucks rapidly. Curculio dusts or sprays will be needed this week. Curculio numbers are increasing, with 80 per cent of females ready to lay eggs. Treat as soon as jarring records indicate curculio abundant, paying particular attention to the outer rows of trees.

For the Belleville-Hardin-Centralia Area: Early apples are dropping their petals, with late varieties pink to full bloom. Protect new foliage with sulphur for scab. The calyx spray will probably be needed this week on most varieties and should include sulphur for scab. Apply the calyx after petals are off. Peach shucks are splitting. Apply curculio sprays or dusts as soon as jarring records indicate curculio abundant. Treat outer rows in the orchard first.

For the Bedford-Lexington-Southwestern Ohio Area: Apples are full bloom to early petal fall. Apply the calyx spray, including sulphur, for scab after petals drop. On orchards not sprayed to date for scab control, a lime sulphur fungicide in the calyx is suggested, spraying thoroughly from two sides. This will result in spray burn, some fruit drop and russeted fruit, but may save a crop unsprayed to date.



Peaches are through blooming. No curculio sprays needed this week unless jarring records indicate curculio are abundant.

On Concord grapes the first black rot spray should be applied late this week.

For the Quincy-Pittsfield Area: Apples are prepink to pink. Some varieties may bloom this week. Scab spores are discharging and all new foliage should be protected by sulphur. Where bloom blight has been serious in past seasons, spray susceptible varieties with 2-4-100 Bordeaux in the early bloom.

For the Peoria-Champaign-Lafayette Area: Apples are prepink. No bloom is expected this week. Scab spores are discharging and all new foliage should be protected by sulphur.

For the Northern Illinois-Indiana Area: Apples are mostly delayed dormant. Scab spores are discharging, and all new foliage should be protected by sulphur.

Southwestern Michigan reports apple crop good and a few peaches.

Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
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Acts approved by Congress May 8 and June 30, 1914

May 7 to 13, 1944

OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers. SPRAY SERVICE REPORT AREAS

- 1 - Paducah-Villa Ridge
- 2 - Carbondale-Vincennes-Henderson-
Louisville, Ky.
- 3 - Belleville-Hardin-Centralia

- 4 - Bedford-Lexington-S.W. Ohio
- 5 - Quincy-Pittsfield
- 6 - Peoria-Champaign-Lafayette
- 7 - Northern Illinois-Indiana

Weather has continued cool, with frequent rains over the entire orchard area. In Kentucky, southern Indiana and Illinois, primary scab infection is appearing in many orchards. Primary scab infection may still be very heavy over most of the fruit area. Growers should keep foliage protected from scab by sulphur. Peach orchards should be jarred daily and a curculio spray or dust applied where curculio are abundant.

For the Paducah-Villa Ridge Area: At Paducah codling moth started emerging April 26. First hatch is expected May 8. Apple scab is still serious and ~~early cover sprays~~ should include sulphur. Peaches are growing rapidly. Curculio sprays are needed in all orchards when jarring indicates numbers abundant.

For the Carbondale-Vincennes-Henderson-Louisville, Kentucky Area: Calyx sprays were applied by May 1. The calyx toff, or first cover spray, should be applied in most orchards May 7 to 13. These sprays should include sulphur for scab. Codling moth emerged May 2 and 3 at Vincennes and Henderson, and ~~first hatch is predicted~~ for May 17. Peach shucks are off. Orchards not protected by a curculio spray or dust should be jarred daily to determine the abundance of curculio. Protect edges of orchards first, keeping all fruit protected when curculio become abundant. First cedar rust showing.

For the Belleville-Hardin-Centralia Area: Apples are past the calyx. The calyx toff, or first cover spray, should be applied May 7 to 13 and should include sulphur for scab. On peaches apply curculio sprays or dusts as soon as jarring records indicate curculio abundant. Treat outside rows in the orchard first.

For the Bedford-Lexington-Southwestern Ohio Area: The calyx spray will be needed on most varieties by May 13. Apple scab is still a serious threat, particularly in the vicinity of Cincinnati, making it necessary that sulphur be included in the calyx spray and at least the first cover spray.

Peach shucks are off and curculio sprays or dusts are needed when jarring indicates curculio are abundant. Oriental fruit moth are expected to be entering peach twigs May 7 to 13.

In grape vineyards where black rot has been serious in past seasons, apply second black rot sprays to grapes May 7 to 13.

For the Quincy-Pittsfield Area: Winesap and Willow Twig apples are in full bloom. Earlier varieties will be ready for the calyx by May 8. Most varieties should have a calyx spray before May 14. This spray should include sulphur for scab.

For the Peoria-Champaign-Lafayette Area: Apples are pink to full bloom. Apply pink spray including sulphur on varieties not open. Where blight has been serious in past seasons, spray susceptible varieties with 2-4-100 Bordeaux in the early bloom. A good many varieties may be ready for the calyx before May 13. The calyx spray should include sulphur for scab.

For the Northern Illinois-Indiana Area: Apples are from pre-pink to early bloom. Early varieties may open by May 7. Most varieties will need a pink spray containing sulphur between May 7 and 13. At least one spray containing sulphur will be needed for scab control before the calyx spray.

Compiled by:

M. D. Farrar, Illinois Natural History Survey

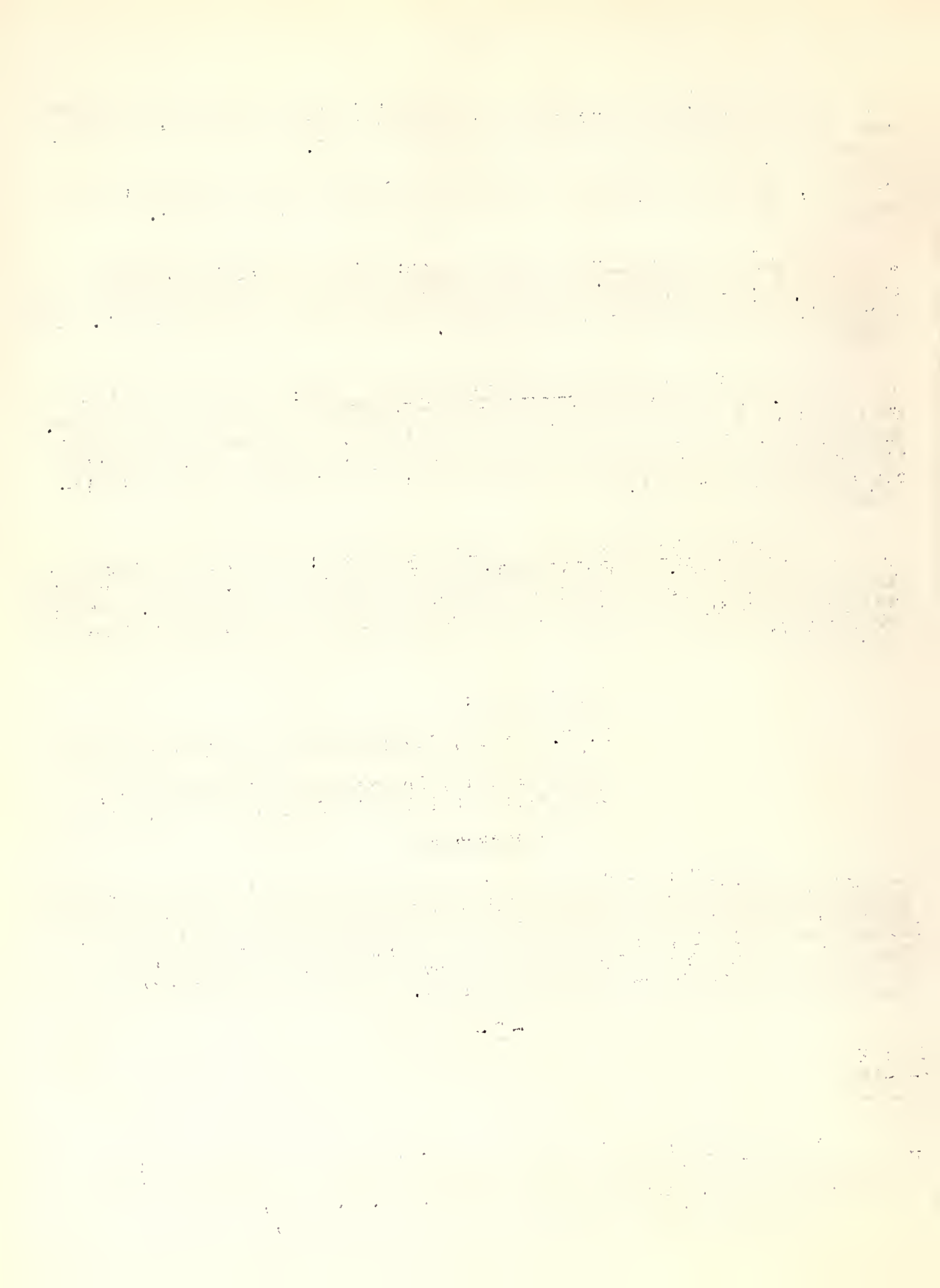
Dwight Powell, Department of Horticulture,
University of Illinois College of Agriculture

CLOSING ANNOUNCEMENT: And with that we conclude today's spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Kentucky State Horticultural Society, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

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Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture, and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914



May 14 to 20, 1944

OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

- | | |
|--|---------------------------------|
| 1 - Paducah-Villa Ridge | 4 - Bedford-Lexington-S.W. Ohio |
| 2 - Carbondale-Vincennes-Henderson-
Louisville, Ky. | 5 - Quincy-Pittsfield |
| 3 - Belleville-Hardin-Centralia | 6 - Peoria-Champaign-Lafayette |
| | 7 - Northern Illinois-Indiana |

General: Through May 5-7 freezing temperatures severely injured strawberries over the entire area. Fruit was about 1/2 grown in Kentucky when killed by the frost. Kentucky grapes were severely damaged. Apple scab still serious threat to the apple crop. Frost damaged apples in many sections. Peach prospects unchanged.

For the Paducah-Villa Ridge Area: First hatch codling moth expected May 15. For southern half of Kentucky, Bordeaux is suggested for scab control in early cover sprays. Conditions are very favorable for scab. At Princeton, Kentucky, apple orchards receiving regular schedule show many apples deformed by quince rust. None found in orchards sprayed with three pounds of sulphur and 1/2 pound "Fermate" since pink stage. Oriental fruit moth entering peach twigs May 10. For curculio, protect outer tree rows in peach orchards with sprays or dusts where jarring indicates curculios are abundant. On scab-susceptible varieties, apply a ten-day spray containing six pounds of wettable sulphur for peach scab when fruit is 1/2 inch in diameter.

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For the Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area: Heavy frosts reported for May 5 to 7, with 50 per cent apples killed one orchard near Vincennes. First codling moth hatch expected May 20-22. Heavy scab spore discharge Vincennes May 5-6. Sulphur for scab control should continue wherever practical. Growers changing to a full nicotine schedule should use "Fermate" for scab in first cover and reduce lime to 2 pounds per 100 gallons. In these orchards the second-cover spray should include bentonite, nicotine sulphate, and summer oil. Have first full nicotine spray on by May 20. The "June drop" of peaches is heavy on young trees. Curculio are still more numerous in the edges of orchards, and sprays or dusts should be continued where jarring indicates curculio are abundant. Due to rainy weather, on scab-susceptible varieties add 6 pounds of wettable sulphur for peach scab when fruit is 1/2 inch in diameter.

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For the Belleville-Hardin-Centralia Area: Apples will be ready for calyx top-off by May 14. Calyx top-off and first cover spray should contain sulphur for scab. Growers changing to a full nicotine schedule should use "Fermate" for scab in the first cover and reduce lime to 2 pounds per 100 gallons. In these orchards the second-cover spray should include bentonite, nicotine sulphate and summer oil. At Grafton, 60 per cent of the codling moths have pupated. None have emerged. Peaches are past shuck fall at Belleville and Centralia. Peach leaf curl is severe at Grafton. Orchards injured by peach leaf curl should be fertilized with nitrogen to stimulate growth of new leaves. Curculio are appearing on the edges of the orchards, and sprays or dusts should continue where jarring indicates curculio are abundant.

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For the Bedford-Lexington-Southwestern Ohio Area: Apples will be ready for the calyx top-off or first-cover spray in the ~~northern~~ part and the second-cover spray in the southern portion of this area by May 14-20. Bloom is heavy in many orchards. Scab spore discharge was heavy the first week in May, and sprays through the first cover should contain sulphur for scab. Growers changing to a full nicotine schedule should use "Fer-mate" for scab in the first cover and reduce lime to 2 pounds per 100 gallons. In these orchards the second cover should include bentonite, nicotine sulphate and summer oil. On peaches susceptible to peach scab, apply a ten-day spray containing six pounds of wettable sulphur when fruit is 1/2 inch in diameter. A few curculio are appearing in peach orchards. The second curculio spray should be applied in the vicinity of Lexington about May 15. Strawberries were severely injured by frost at Bedford.

For the Quincy-Pittsfield Area: Apples will be ready for the calyx by May 14. The calyx, calyx top-off and first-cover sprays should contain sulphur for scab. Orchards not sprayed for aphids show heavy populations of grain aphids that are doing considerable damage. The addition of one pint of nicotine sulphate per 100 gallons to the calyx and first-cover sprays will kill those aphids wetted by the spray.

For the Peoria-Champaign-Lafayette Area: Apples are full bloom over much of the area, with petals falling at Martinsville, Illinois. A spray containing 8 pounds of wettable sulphur should be applied in full bloom for scab. The calyx and calyx top-off and first-cover sprays should also include full strength wettable sulphur for scab. Most varieties will be ready for the calyx spray May 14-20. First codling moth emergence expected Lafayette May 18, first hatch by June 1.

For the Northern Illinois-Indiana Area: Apples are pink with early bloom expected by May 13. Full bloom expected May 14-20. A spray containing 8 pounds of wettable sulphur should be applied in full bloom for scab. The calyx and calyx top-off should also include full strength wettable sulphur for scab. A prolonged bloom may make scab sprays very important this season. Keep new foliage protected by sulphur.

Compiled by:

M. D. Farrar, Illinois Natural History Survey

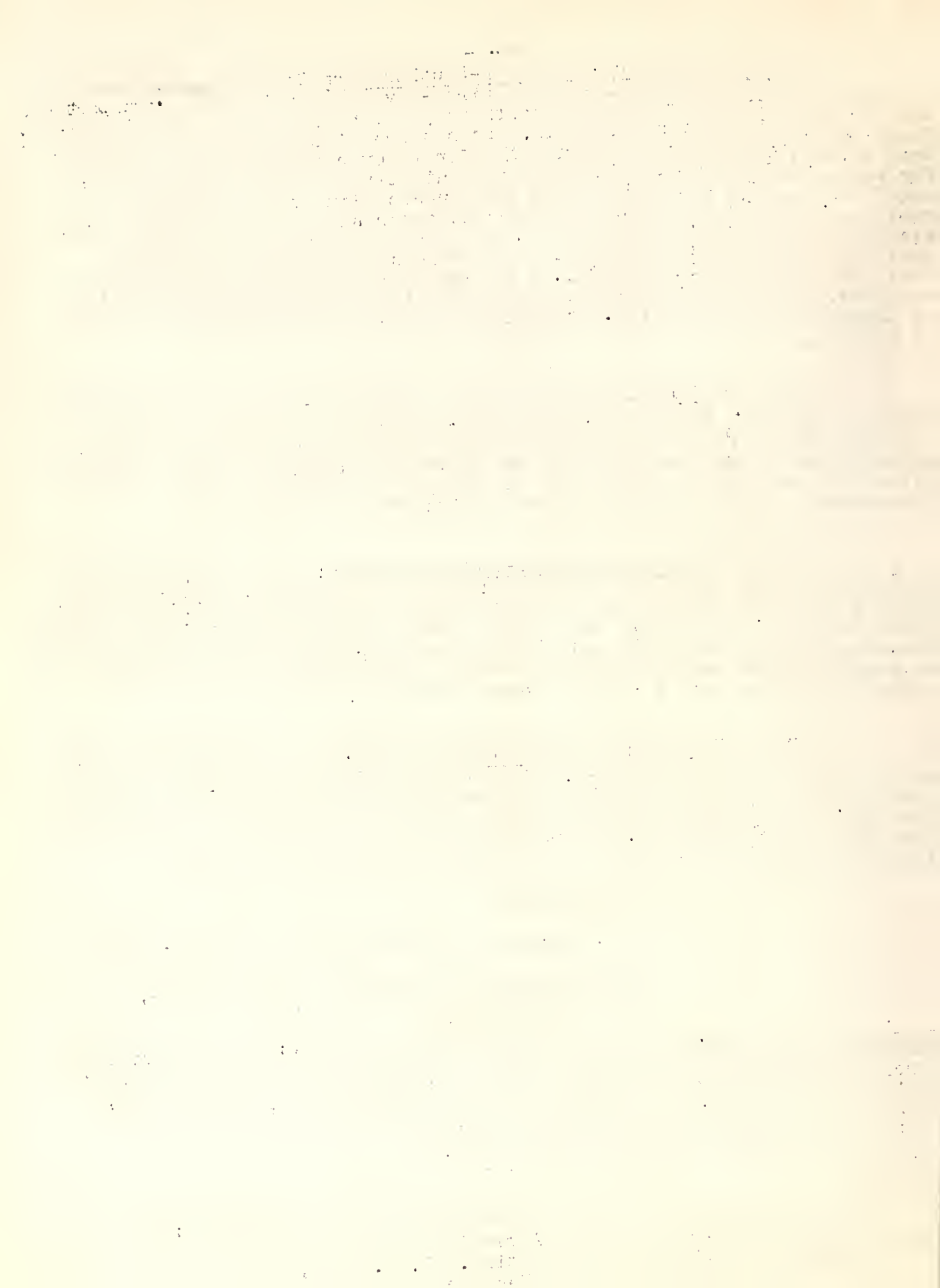
Dwight Powell, Department of Horticulture,
University of Illinois College of Agriculture

CLOSING ANNOUNCEMENT: And with that we conclude today's spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Kentucky State Horticultural Society, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

TNM:JE
5-12-44

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Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914



OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

- | | |
|--|---------------------------------|
| 1 - Paducah-Villa Ridge | 4 - Bedford-Lexington-S.W. Ohio |
| 2 - Carbondale-Vincennes-Henderson-
Louisville, Ky. | 5 - Quincy-Pittsfield |
| 3 - Belleville-Hardin-Centralia | 6 - Peoria-Champaign-Lafayette |
| | 7 - Northern Illinois-Indiana |

General: During the week of May 14 to 20, codling moth adults emerged south of central Illinois and Indiana in record numbers. Fruit in all areas except seven should be protected by codling moth sprays for the next three weeks.

A heavy hatch of worms will occur the week of May 21 to 27 over the southern half of Illinois, Indiana, southwestern Ohio and Kentucky.

For black and red raspberries in all areas except one and two, spray just before the blossoms open with 8-8-100 Bordeaux for anthracnose control.

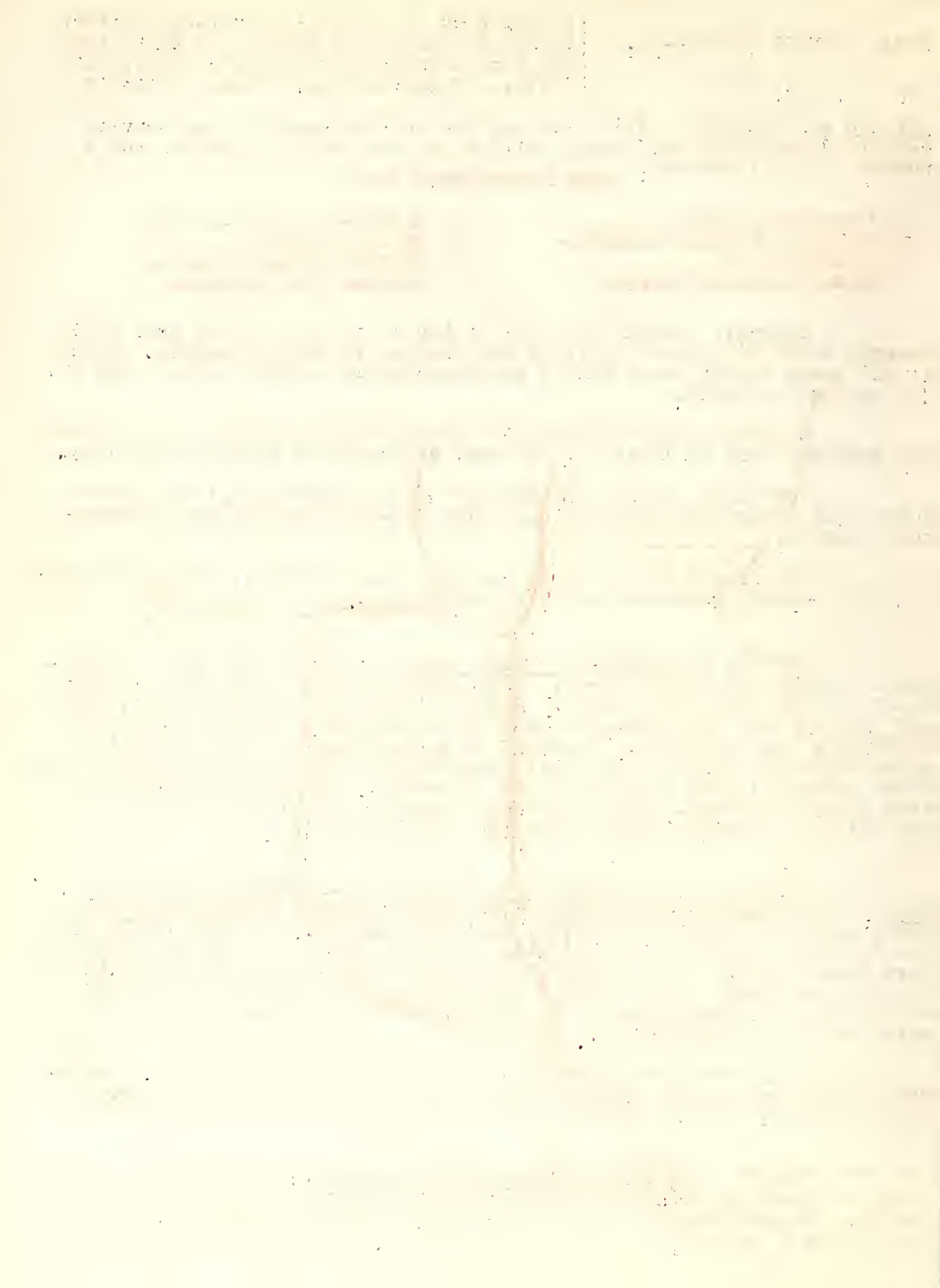
For grapes in all areas but one, two and three, spray for black rot with 4-6-100 Bordeaux before blossoms open.

For the ⁷Paducah-Villa Ridge Area: Codling moth will be hatching in large numbers May 21-27. Apply codling moth sprays 7 to 10 days apart for the next three weeks. Summer oil should be added to kill eggs and improve kill of worms. $\frac{1}{2}$ -1-100 Bordeaux should be used with sprays containing lead arsenate. One-half to three-fourths pint of nicotine sulphate to 100 gallons will kill many adult moths and young leafhoppers. Spray thoroughly and keep the fruit protected. Curculio are causing many peaches to drop. One additional spray or dust 10 days after last one will be needed for adult curculio now appearing.

For the Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area: Record numbers of codling moth adults emerged May 14 to 20 and a heavy hatch of worms is expected, beginning May 21. Growers should follow their spray schedules carefully, spraying every 7 to 10 days for the next three weeks. Use summer oil with lead arsenate to kill eggs. In the lead arsenate sprays applied between May 21 and June 3, the addition of $\frac{1}{2}$ to $\frac{3}{4}$ pint nicotine sulphate to 100 gallons will kill many adult moths and young leafhoppers.

Many curculios are still appearing in peach orchards. A curculio spray or dust 10 days after the last treatment will kill curculio adults appearing now.

For the Belleville-Hardin-Centralia Area: Adult codling moths taken in traps at several locations indicate a hatch of worms will start May 21. Growers should follow their spray schedules carefully, spraying every 7 to 10 days for the next three weeks. Use summer oil with lead



arsenate to kill eggs. The addition of $\frac{1}{2}$ to $\frac{3}{4}$ pint of nicotine sulphate in the next two cover sprays will kill many adult moths and young leafhoppers.

Curculio still important in peach and early apple orchards. A spray or dust should be applied 10 days after last treatment.

For the Bedford-Lexington-Southwestern Ohio Area: A heavy set of apples reported, vicinity of Cincinnati. Codling moth emergence started May 11 and has been heavy since May 14. Worms will be hatching by May 21, with a peak of hatch expected between May 28 and June 5. Growers should follow their spray schedules carefully, spraying every seven to 10 days for the next three weeks. Summer oil should be added to lead arsenate sprays. The addition of $\frac{1}{2}$ to $\frac{3}{4}$ pint of nicotine sulphate per 100 gallons in the next two cover sprays will kill many adult moths and young leafhoppers.

Heavy set of peaches reported, vicinity of Cincinnati. Curculio jarred in orchard May 14. The second curculio spray or dust should be applied by May 21 at Lexington and between May 21 and 30 at Bedford.

For the Quincy-Pittsfield Area: Codling moth emergence began week May 14-20 and first worms will be hatching by May 23. Emergence of adults may be heavy May 21 to 27, with eggs hatching in 4 to 10 days depending on temperatures. First cover spray should be completed by May 22. Use oil in lead arsenate schedules not closer than 14 days from last sulphur application. Keep fruit protected against codling moth for next three weeks.

For the Peoria-Champaign-Lafayette Area: Codling moth emergence is just starting at Martinsville, Illinois, with first hatch expected May 23 to 27. The calyx top-off or first cover spray should be applied May 21 to 27. Both sprays should include sulphur for scab.

Peaches should receive a spray or dust for curculio 10 days after last treatment.

For Northern Illinois, Indiana Area: Apples will be ready for calyx May 20. The calyx, calyx top-off and first cover spray should include sulphur for scab. Leafhoppers are second instar. A few red spiders are showing up in northern Indiana orchards.

Compiled by:

M. D. Farrar, Illinois Natural History Survey
Dwight Powell, Department of Horticulture,
University of Illinois College of Agriculture

CLOSING ANNOUNCEMENT: And with that we conclude today's spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Kentucky State Horticultural Society, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

TNM:JE 5-19-44

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Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

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Louisville, Ky. | 5 - Quincy-Pittsfield |
| 3 - Belleville-Hardin-Centralia | 6 - Peoria-Champaign-Lafayette |
| | 7 - Northern Illinois-Indiana |

General: Codling moths are emerging since May 23 over the entire area covered by this report. Peak emergence was past in the southern half of Illinois, Indiana, Southwestern Ohio and Kentucky between May 21 and 27. Peak hatch of worms will occur May 28 to June 3 and all orchards should be heavily sprayed, using summer oil wherever practical. Heavy spraying should be continued into the following week to build a toxic residue for probable heavy second-brood hatch.

No further curculio sprays or dusts are needed in most orchards. Mowing cover crops, cultivating peach orchards, and picking up wormy drop peaches will aid in controlling second-brood curculio.

On grapes, apply spray for control of black rot and berry moth as soon as they finish blooming.

For the ⁷Paducah-Villa Ridge Area and for the ⁷Carbondale-Vincennes, Henderson, and Louisville, Kentucky Area: A heavy hatch of worms will occur May 28 - June 3. (Eggs are hatching seven days after laid.) Use three pounds arsenate of lead, one-half pound of copper sulphate, one pound of lime, plus one-half gallon of summer oil for each 100 gallons of mixture, or nicotine plus summer⁵ oil. Omit spraying very early varieties such as Transparent, Henry Clay and Red Bird. No further first-brood curculio sprays or dusts needed. Mow cover crops, cultivate peach orchards and pick up wormy peaches.

For the ³Belleville-Hardin-Centralia Area, for the ³Bedford-Lexington, Southwestern Ohio Area, and for the ³Quincy-Pittsfield Area: A heavy hatch of worms will start May 28 that will continue for ten days to two weeks. Keep fruit thoroughly covered, using summer oil in one or more peak cover sprays. Omit sulphur when using summer oil. With lead arsenate include one-half pound of copper sulphate and one pound of lime as corrective on all varieties except Jonathan and Golden Delicious.

Curculios are decreasing in many orchards, but jarring records may indicate an additional spray or dust might be profitable. In June mow cover crop, cultivate orchards, pick up wormy peaches.

Spray grapes as they finish blooming for black rot and berry moth control.



For the Peoria-Champaign-Lafayette Area: Codling moth hatch will start this week but probably will not be heavy until June 4 to 10. No further sulphur should be used. Use summer oil in the next two sprays, starting summer oil ten days after last spray containing sulphur. With lead arsenate, use $\frac{1}{2}$ -1-100 Bordeaux as corrective on all varieties except Jonathan and Golden Delicious.

For Northern Illinois-Indiana Area: First worms will be hatching before June 3. Heavy hatch will not occur before June 4 to 10. Spray applied May 28 to June 3 should include sulphur for scab.

Compiled by:

M. D. Farrar, Illinois Natural History Survey

Dwight Powell, Department of Horticulture,
University of Illinois College of Agriculture

CLOSING ANNOUNCEMENT: And with that we conclude today's spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Kentucky State Horticultural Society, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

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Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT--No. 11

June 4 to 10

(Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
(and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois)

OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

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|--|---------------------------------|
| 1 - Paducah-Villa Ridge | 4 - Bedford-Lexington-S.W. Ohio |
| 2 - Carbondale-Vincennes-Henderson-
Louisville, Ky. | 5 - Quincy-Pittsfield |
| 3 - Belleville-Hardin-Centralia | 6 - Peoria-Champaign-Lafayette |
| | 7 - Northern Illinois-Indiana |

General: Codling moth adults are still emerging in southern Illinois, Indiana and Kentucky, although the peak flight occurred two weeks ago. Growers are urged to keep fruit protected from first-brood worm entrances for another two weeks. Codling moth bands should be applied in all orchards at once to capture and kill first-brood worms soon to be leaving apples.

Blotch-susceptible varieties should receive 4-6-100 Bordeaux in the next two sprays in all areas except No. 7.

Peach prospects are excellent in southeastern Indiana, southwestern Ohio and eastern Kentucky. Further curculio sprays or dusts may be omitted, except in orchards where jarring records indicate adults are still active. Good orchard practices for June are to mow cover crops, cultivate under peach trees and pick up wormy peaches.

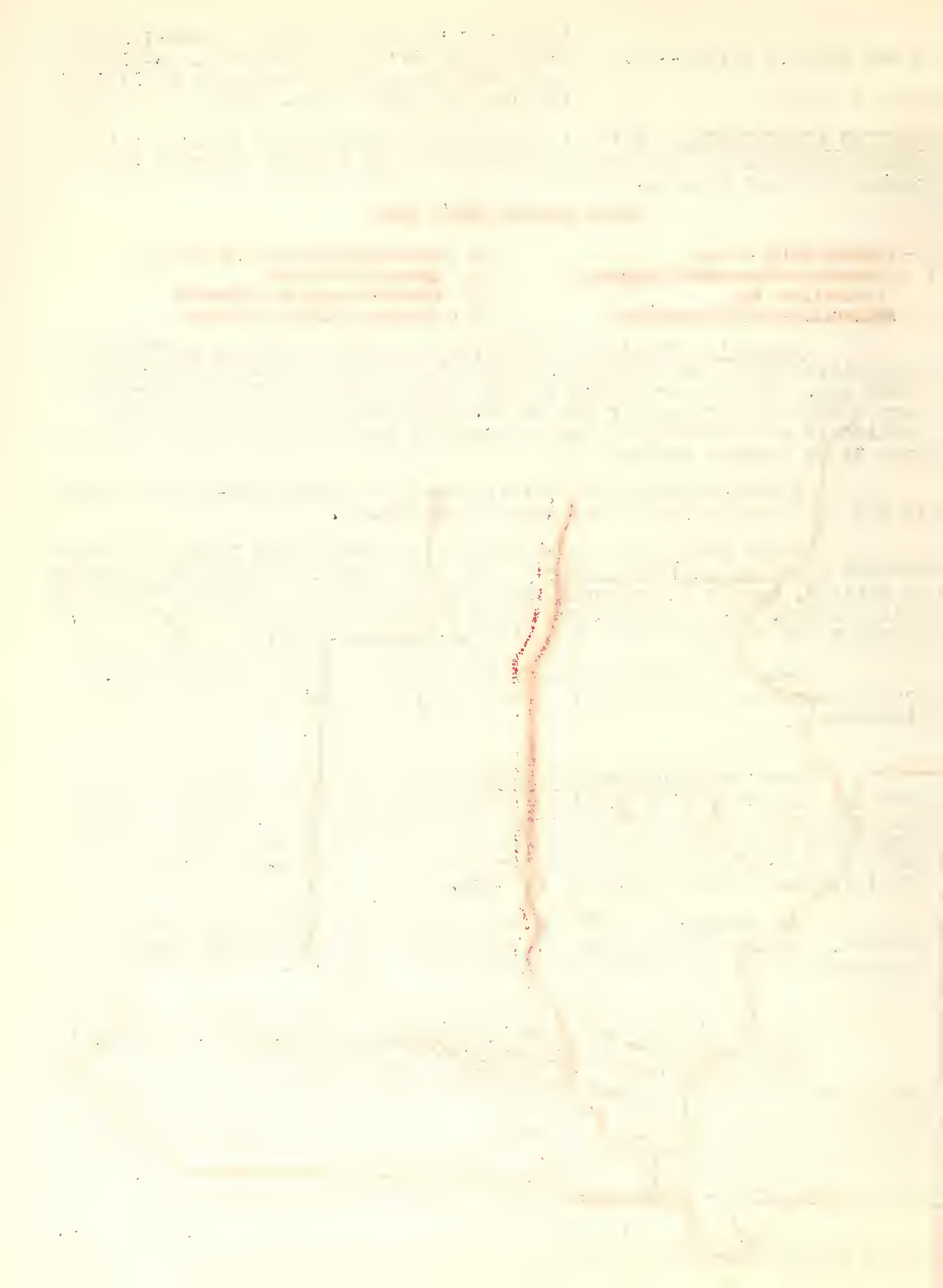
Grapes should be sprayed with three pounds lead arsenate, four pounds copper sulphate and six pounds hydrated lime as soon as they cease blooming.

For the Paducah-Villa Ridge Area: Codling moths are still emerging and worms will continue to hatch in moderate numbers. Growers are urged to continue sprays except on early varieties. Apply codling moth bands now. Growers who had bitter rot trouble in 1943 should start now with a 4-6-100 or 8-8-100 Bordeaux at 10-to 14-day intervals to head off infection before spots can be seen.

No further first-brood curculio sprays or dusts necessary on peaches. Mowing of cover crops, cultivation and picking up dropped peaches will aid in control of second-brood curculio.

For the Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area, for the Belleville-Hardin-Centralia Area, and for the Bedford-Lexington-Southwestern Ohio Area: Codling moth emergence probably past the peak May 18-24, but sufficient moths are still emerging to justify continued spraying. Fruit should be well covered, allowing not more than 10 days between sprays. Sprays applied June 4 to 10 should include summeroil. On early varieties, because of residue, lead arsenate should not be applied after the fourth-cover spray. Nicotine sprays at 10-day intervals may be continued well into June.

Blotch-susceptible varieties must be watched and 4-6-100 Bordeaux applied for blotch control where necessary.



Plum curculios are still active in Areas 4 and 5. Peach orchards should be jarred regularly for curculio. Apply a spray or dust 10 days after last treatment in orchards where curculios are still abundant.

For the Quincy-Pittsfield Area, and for the Peoria-Champaign-Lafayette Area: Codling moth adults are emerging in large numbers, probably reaching a peak between May 24 and 30. A heavy hatch of worms will occur June 4 to 10, and fruit should be well protected over this period with a spray, including summer oil. Apply codling moth bands by June 10.

Peach orchards should be jarred regularly and sprayed or dusted for curculio if curculios are abundant.

For the Northern Illinois-Indiana Area: Codling moth emerged in large numbers the latter days of May, and a heavy hatch of worms may be expected June 4 to 10. Continued rains are favorable to scab and sulphur should be included in sprays applied June 4 to 10. Apply codling moth bands by June 15. In orchards where leafhoppers are serious, include one pint of nicotine sulphate in the spray applied when young leafhoppers are about full grown.

Blotch is seldom serious in this area and sprays for control are not necessary.

Compiled by:

M. D. Farrar, Illinois Natural History Survey

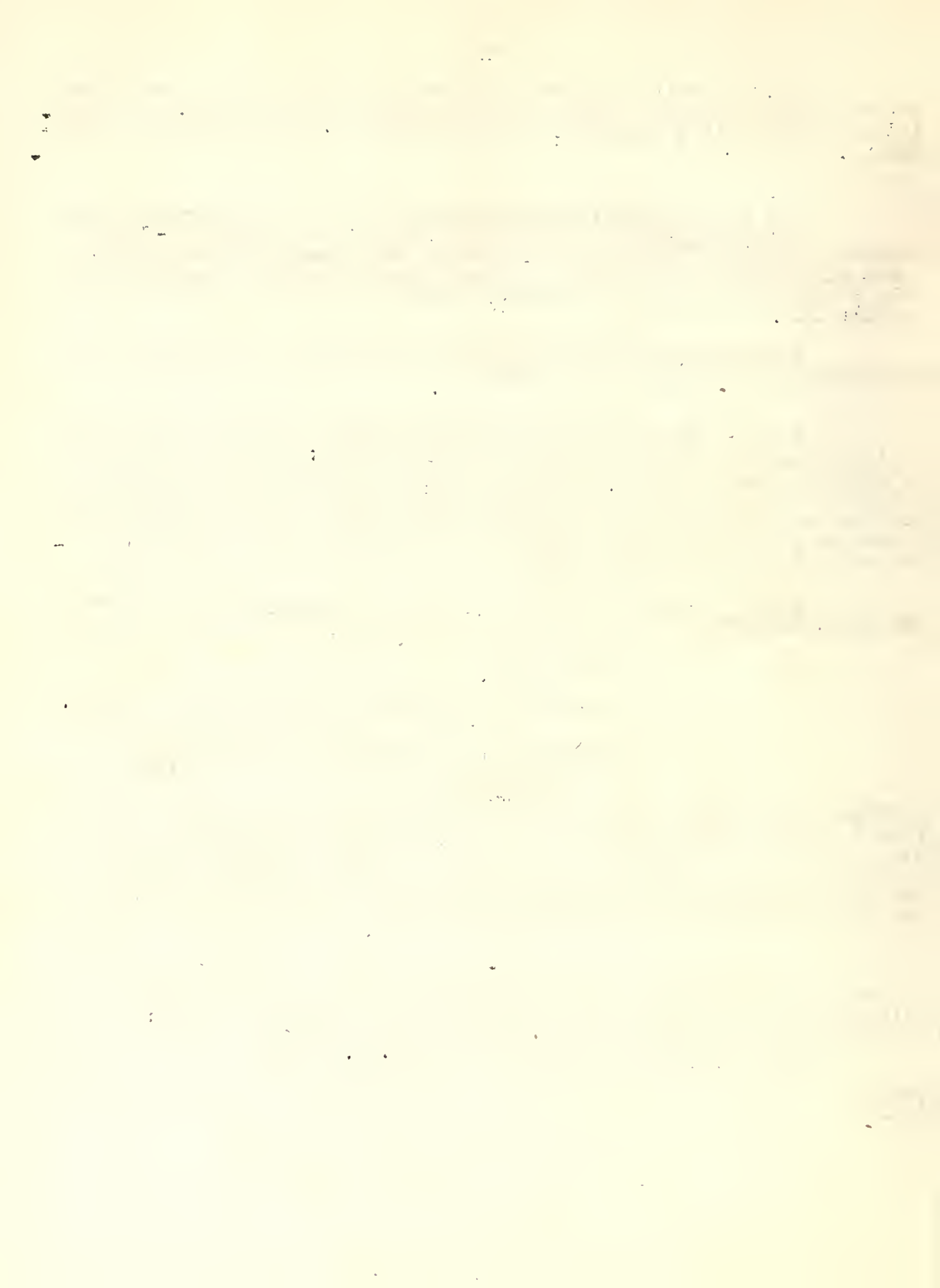
Dwight Powell, Department of Horticulture
University of Illinois College of Agriculture

CLOSING ANNOUNCEMENT: And with that we conclude today's spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Kentucky State Horticultural Society, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

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Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

TNM:JE
6-2-44



SPRAY SERVICE REPORT--No. 12

June 11 to 17

(Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
(and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois

OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

- 1 - Paducah-Villa Ridge
- 2 - Carbondale-Vincennes-Henderson-Louisville, Ky.
- 3 - Belleville-Hardin-Centralia

- 4 - Bedford-Lexington-S.W. Ohio
- 5 - Quincy-Pittsfield
- 6 - Peoria-Champaign-Lafayette
- 7 - Northern Illinois-Indiana

General: Many worms were entering apples June 4 to 10, with adult moths still active in all areas except Kentucky and extreme southern Illinois. Spraying should not be relaxed, and in most orchards not more than 12 days should be allowed between sprays. This is especially important in orchards following a nicotine schedule. Codling moth bands must be applied now to be effective. On blotch-susceptible varieties 4-6-100 Bordeaux should be included in sprays applied June 11 to 17. Growers who had bitter rot on certain varieties in 1943 should start seven days after last spray, using 4-6-100 Bordeaux at 10- to 14-day intervals until four sprays have been applied. Caution: Severe foliage injury has occurred where 4-6-100 Bordeaux has been applied with "Fermate" or on top of a "Fermate" residue. Do not use these two materials on the same trees. Either material alone will probably control bitter rot.

Peaches: No further sprays or dusts for control of curculio or Oriental fruit moth are needed until within four to six weeks of harvest. Oriental fruit moth has continued less abundant than usual in most orchards. Catfacing is light on Illinois peaches but very heavy in Indiana and some parts of Kentucky and southwestern Ohio. A heavy crop in these areas will probably offset the damage by catfacing.

⁵ For the Paducah-Villa Ridge Area⁶ The harvest of Transparent apples will start by June 19, and further sprays on early varieties are not advised. Later varieties should be sprayed June 11 to 17 to help carry over the period of Transparent harvest. Varieties susceptible to blotch or bitter rot should receive 4-6-100 Bordeaux. Apply codling moth bands.

³ Peach dusting or spraying is not necessary until, preharvest treatment. Cultivation of peach orchards will destroy second-brood curculios now in the soil. ⁴

² For the Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area; Belleville-Hardin-Centralia Area; and Bedford-Lexington-Southwestern Ohio Area: ⁴ Codling moth flight is falling off, but enough moths are still flying to make continued spraying necessary except on early varieties. At Vincennes a 67 per cent increase in worms and stings is reported for the past 10 days in well-sprayed orchards. Approximately 10 per cent of injuries found June 6 and 7 were less than

one day old. Mature larvae started leaving apples June 1. Bands should be on the trees now to be effective. An interval of not to exceed 12 days should occur between sprays. Maintain all treatments at full first-brood strength. Sprays containing 4-6-100 Bordeaux are needed on blotch-susceptible varieties.

Peach dusting or spraying may be stopped until preharvest treatments. Cultivate to destroy second-brood curculio in the soil. Oriental fruit moths are light in bearing orchards but are reported heavy in some young orchards.

For the Quincy-Pittsfield Area and the Peoria-Champaign-Lafayette Area: Moths are still emerging in large numbers. In a Griggsville orchard, traps caught four moths per trap on June 4 and 5. Full strength first-brood sprays should be continued with not more than 12 days between treatments. Codling moth bands should be applied at once to catch early worms. Blotch-susceptible varieties should receive 4-6-100 Bordeaux. Bitter rot sprays are not needed yet.

For the Northern Illinois-Indiana Area: Codling moths are still flying in large numbers and a heavy hatch of worms may be expected June 11 to 17. Danger from scab is about over, and summer oil may be included in sprays applied June 11 to 17 if at least ten days has elapsed since the last application of sulphur. In orchards where leafhoppers are serious, include one pint of nicotine sulphate per 100 gallons of spray when the young leafhoppers are about full grown. The use of 4-6-100 Bordeaux is not necessary in this area for the control of blotch.

Compiled by:

M. D. Farrar, Illinois Natural History Survey

Dwight Powell, Department of Horticulture
University of Illinois College of Agriculture

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Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

TNM:JE
6-9-44

June 18 to 24

OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

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For the Paducah-Villa Ridge Area: The harvest of Transparent has started. A few Red Bird peaches will be picked June 19.

Because of the high number of codling moth pupae found, it is advised that the first second-brood spray be applied early in the week of June 19-24.

Continued applications of Bordeaux for bitter rot is recommended in orchards where this disease has appeared in previous years, although to date no infection has appeared.

For peaches the first second-brood curculio adults appeared on June 14, but no general increase in orchards has developed. Oriental fruit moth injury has increased slightly. Brown rot has been observed on Red Bird peaches, with weather favorable for its development.

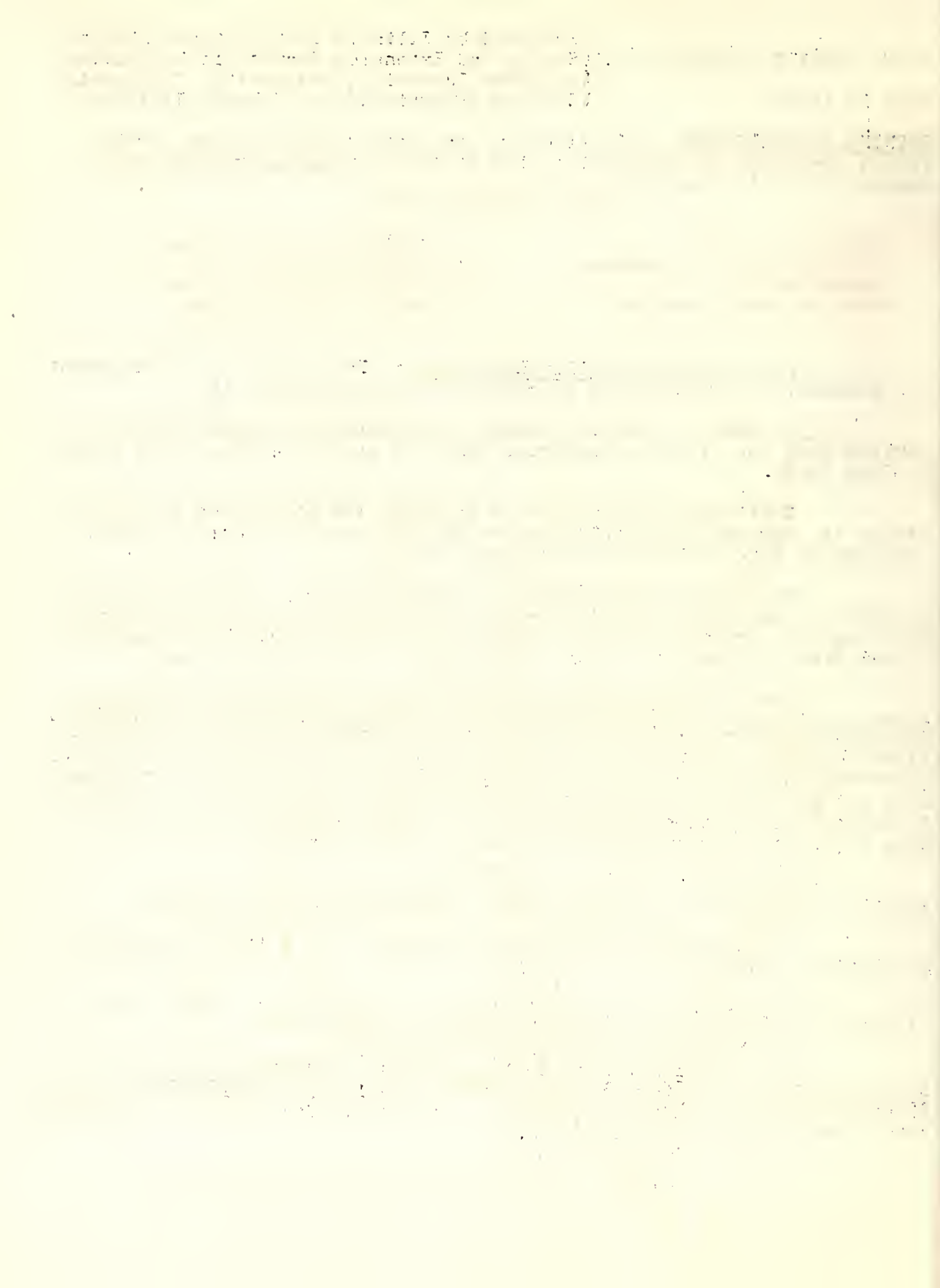
For the Carbondale-Vincennes-Henderson-Louisville, Kentucky Area; Belleville-Hardin-Centralia Area; and Bedford-Lexington-Southwestern Ohio Area: Codling moth flight is light, with a continued moderate first-brood hatch. Weather has been favorable for activity and development. Second-brood worms should start hatching June 23 in the Vincennes area and about July 1 in the Carbondale area. A heavy hatch is expected in all regions of these areas by July 4. Avoid allowing more than 12 days to elapse between first and second-brood sprays.

Bitter rot has not been reported, but infection may appear at any time in orchards where the disease was present the past year.

On peaches the Oriental fruit moth is very light. Curculio population is low.

An increase of grape leafhopper is expected, calling for a nicotine application as soon as considered necessary.

For the Quincy-Pittsfield Area and the Peoria-Champaign-Lafayette Area: Codling moths are still emerging in fairly large numbers. First-brood sprays should be continued at 7- to 10-day intervals. Codling moth bands should be on this week.



For the Northern Illinois-Indiana Area: No report has been received from this area during the past week. It is suspected that codling moth hatch is at a peak, and accordingly sprays should be applied at 10-day intervals. Where leafhoppers are serious, use one pint of nicotine sulfate per 100 gallons of water with the recommended codling moth sprays.

Compiled by:

M. D. Farrar, Illinois Natural History Survey

Dwight Powell, Department of Horticulture
University of Illinois College of Agriculture

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TNM:JE
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Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT--No.14 (Prepared by Illinois State Natural History
June 25 to July 1 (Survey and Extension Service in Agriculture
(and Home Economics, University of Illinois
(College of Agriculture, Urbana, Illinois

OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

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Louisville, Ky. | 5 - Quincy-Pittsfield |
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| | 7 - Northern Illinois-Indiana |

For the Paducah-Villa Ridge Area: Damage by quince rust has been widespread on apples. Transparent harvest has been under way for one week, with most fruit free of worms. Second-brood adults started to emerge June 18. Many worms will be hatching by June 23 or 24, and fruit should be protected by sprays as soon as practical after this date. A continued heavy hatch is expected for several weeks. No bitter rot infection has been reported. First second-brood curculio appeared June 14. Adults are scarce in most orchards and no sprays or dusts are needed this week. Oriental fruit moth continues lighter than one year ago.

For the Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area; Belleville-Hardin-Centralia Area; Bedford-Lexington, Kentucky, Area: Hatch of second-brood codling moth is expected to start at Vincennes June 25; Bedford June 27; Carbondale June 29; Centralia and Grafton July 5. A continued heavy hatch of worms is expected after these dates. Because of a continued hatch of late first-brood worms, there will be no break between the late second-brood and first third-brood hatch occurring in August. Unless July and August are subnormally cool, the region is likely to experience one of the heaviest codling moth attacks on record. Bitter rot has not been reported, but infection may appear at any time in orchards where the disease was present the past year.

Although there is a slight increase of curculio in peach orchards, no dusts or sprays for control need be applied before early in July. Watch the weekly broadcast for further reports. The Oriental fruit moth continues light in most orchards.

For the Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area: Adult codling moths are still appearing in cages and at light traps, indicating that worms will continue to enter fruit the week of June 25-July 1. Not more than 12 days should occur between sprays through this period.

For Northern Illinois-Indiana Area: Moths were still emerging from cages at Princeton, Illinois, on June 18. Fresh entrances were appearing on apples this week. Mature worms are leaving fruit for

pupation. Sprays should be applied at 10-day intervals. Where leaf-hoppers are serious, use one pint nicotine sulphate for each 100 gallons of mixture with the codling moth spray.

Compiled by:

M. D. Farrar, Illinois Natural History Survey

Dwight Powell, Department of Horticulture
University of Illinois College of Agriculture

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TNM:JE
6-23-44

Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

July 2-8

OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

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For the Paducah-Villa Ridge Area: Apples - First-brood codling moth worms still leaving the apples. Adult activity still on increase from Louisville south in Kentucky. Trap catches at Paducah, Princeton, and Henderson heavier than during first brood. Heavy and complete spray coverage essential by July 4. No bitter rot infection reported. Transparent harvest is about ended.

Peaches - Brown rot continues to appear on ripe peaches in spite of dry, hot weather. Curculio adults still scarce in orchards. Jarring at Paducah shows no increase over last week; however, some increase was noted at Villa Ridge. General dry weather has been unfavorable for emergence. Oriental fruit moth scarce. Less twig injury and more fruit entries noted.

For the Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area; Belleville-Hardin-Centralia Area; Bedford-Lexington, Kentucky, Area: Apples - Codling moth adult catches in bait traps have been steadily increasing. Second-brood hatch is under way but still at a slow rate. The second-brood peak will be less distinct at Vincennes than the first brood, while a distinct peak second-brood hatch is expected at Carbondale. Sprays should be applied at 10- to 14-day intervals, depending on materials used and infestation. Growers changing to nicotine should be certain of obtaining adequate supplies to complete the season. Sprays that are applied beginning June 30 should contain an ovicide. Transparent harvest is about over.

Peaches - Plum curculio jarring in the Carbondale area shows a marked increase of adult activity. Sprays or dusts should be applied the week of July 3 with a second application in 10 days. Oriental fruit moth is light, except in certain localized areas such as Brownstown, Martinsville, and Terre Haute, Indiana. In this area the third brood is entering twigs in large numbers. In other areas such entry is occurring only to a slight degree. Red Bird peach harvest is about over.

For the Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area: Very light codling moth activity this past week. Second-brood moths not expected before July 10.

-2-
For the Northern Illinois-Indiana Area: No codling moth reports this past week from cooperators. Sprays should be applied at 10-day intervals. Where leafhoppers are serious, use one pint nicotine sulphate for each 100 gallons of mixture with the codling moth spray.

Compiled by:

M. D. Farrar, Illinois Natural History Survey

Dwight Powell, Department of Horticulture
University of Illinois College of Agriculture

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TNM:JE
6-30-44

Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

- 1 - Paducah-Villa Ridge
- 2 - Carbondale-Vincennes-Henderson-
Louisville, Ky.
- 3 - Belleville-Hardin-Centralia

- 4 - Bedford-Lexington-S.W. Ohio
- 5 - Quincy-Pittsfield
- 6 - Peoria-Champaign-Lafayette
- 7 - Northern Illinois-Indiana

For the Paducah-Villa Ridge Area: Apple and peach orchards are suffering from high temperatures, with only scattered showers since about June 20. Newly hatched codling moth worms are still entering apples, although the peak hatch probably occurred by June 30. Hatch has been heavy and all fruit not soon to be harvested should be fully protected.

Curculio are numerous in the edges of many peach orchards. A spray or dust containing lead arsenate should be applied at least on rows in edges of orchards where jarring records indicate curculio are abundant. Peaches that will be harvested within 30 days should be protected from brown rot by a sulphur spray or dust. (Do not use lead arsenate in this preharvest treatment.)

For the Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area; Belleville-Hardin-Centralia Area; Bedford-Lexington, Kentucky-Southwestern Ohio Area: A crop prospect of four and one-half million bushels of apples, one and one-half million bushels more than in 1943, is reported for Ohio. For three weeks high temperatures and lack of rain have been general. Codling moths are active. Peak emergence of moths was probably past at Cobden, Illinois, June 30. At Vincennes daily bait trap catches are greater than at any time since May 22, and equal to those made during the peak of first-brood adult activity on July 16-17, 1943. At this date, July 6, they are still less than 20 per cent as great as occurred during the 1944 spring brood peak May 17-20, and are well below what is expected when the approaching peak is reached. Growers who are spraying at the recommended 10- to 14-day intervals are controlling the present attack very well. In orchards where codling moths are a serious problem, summer oil, one-half per cent, should be included in the peak second-brood sprays to kill codling moth eggs. First bitter rot was reported from Henderson, Kentucky, June 29. Considerable blotch has developed during the past two weeks on Duchess in certain orchards.

In many peach orchards curculio are appearing along the edges. For orchards located south of Carbondale, apply two poison sprays or dusts about July 3 and July 13-15; in orchards north of Carbondale, apply one treatment containing poison about July 13-15. Insecticide distributors state that adequate supplies of dusting materials are available locally to make these applications. Peaches that are 30 days or less from harvest should not receive a poison treatment, but should be protected from brown rot by sulphur.



Grape leafhoppers are increasing in many vineyards. A spray containing nicotine should be applied at once, especially covering the underside of the leaves in the centers of the vines.

For the Quincy-Pittsfield Area; Peoria-Champaign, Lafayette Area: Bait pail catches of codling moth indicate there will be many new worms hatching by July 15 with a peak hatch probably not occurring until the following week. Growers should time their second-brood sprays to provide maximum protection over the period July 12-26. Leafhoppers have caused considerable injury to foliage, but further control measures should be delayed until the next brood of young hoppers appear on the undersides of the leaves.

For Northern Illinois and Indiana: A few first-brood worms were still hatching in the vicinity of Rockford, Illinois, on June 30. Not many new worms are expected before the week of July 16-22. A nice crop of fruit is in prospect, and growers should protect the crop by adequate spraying for the remainder of the season. Young leafhoppers are scarce, and the addition of nicotine to sprays applied during the next two weeks would be of little value for leafhopper control.

Compiled by:

M. D. Farrar, Illinois Natural History Survey

Dwight Powell, Department of Horticulture
University of Illinois College of Agriculture

CLOSING ANNOUNCEMENT: And with that we conclude today's spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Kentucky State Horticultural Society, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

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7-7-44

Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914



July 16-22

OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

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| 1 - Paducah-Villa Ridge | 4 - Bedford-Lexington-S.W. Ohio |
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Louisville, Ky. | 5 - Quincy-Pittsfield |
| 3 - Belleville-Hardin-Centralia | 6 - Peoria-Champaign-Lafayette |
| | 7 - Northern Illinois-Indiana |

For the Paducah-Villa Ridge Area: No general relief from drouth over western Kentucky. Codling moths have fallen off in numbers, with only a light flight since July 10. Some worms will be hatching daily in most orchards. Fruit must be kept protected by sprays as it grows in size toward harvest.

Curculio are still numerous around the edges of peach orchards. At least one preharvest treatment one month before harvest should be made for curculio. Peaches that will be harvested within 30 days should be protected from brown rot by a sulphur spray or dust.

For the Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area; Belleville-Hardin-Centralia Area; Bedford, Lexington, Kentucky, and Southwestern Ohio Area: Weather has continued hot and dry, retarding the growth of fruit. Codling moths probably reached the peak of flight in southern Illinois, Indiana, southwestern Ohio and eastern Kentucky July 9, and in the Belleville-Hardin-Centralia Area July 12-15. The peak of second-brood hatch appears underway, but there will be little decline at the present rate for at least two weeks. Growers should be prepared for an increased attack on varieties adjacent to Duchess within a week after harvest of the latter. Bitter rot has been reported at scattered locations.

Curculio are still numerous around the edges of peach orchards. At least one preharvest treatment one month before harvest should be made for curculio. Peaches that will be harvested within 30 days should be protected from brown rot by a sulphur spray or dust.

For the Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area: Heavy flights of codling moths are reported from Calhoun, Greene, and Pike counties between July 4 and 10. Worms from these moths should be hatching between July 12 and 22. Growers should keep fruit well protected over this period. Hatch will probably continue into the last week of July.

For the Northern Illinois-Indiana Area: A few second-brood worms will be hatching this week. Heavy hatch of worms will probably not occur until the last week of July. Not over two weeks should occur between sprays from mid-July to early in August.

Compiled by:

M. D. Farrar, Illinois Natural History Survey

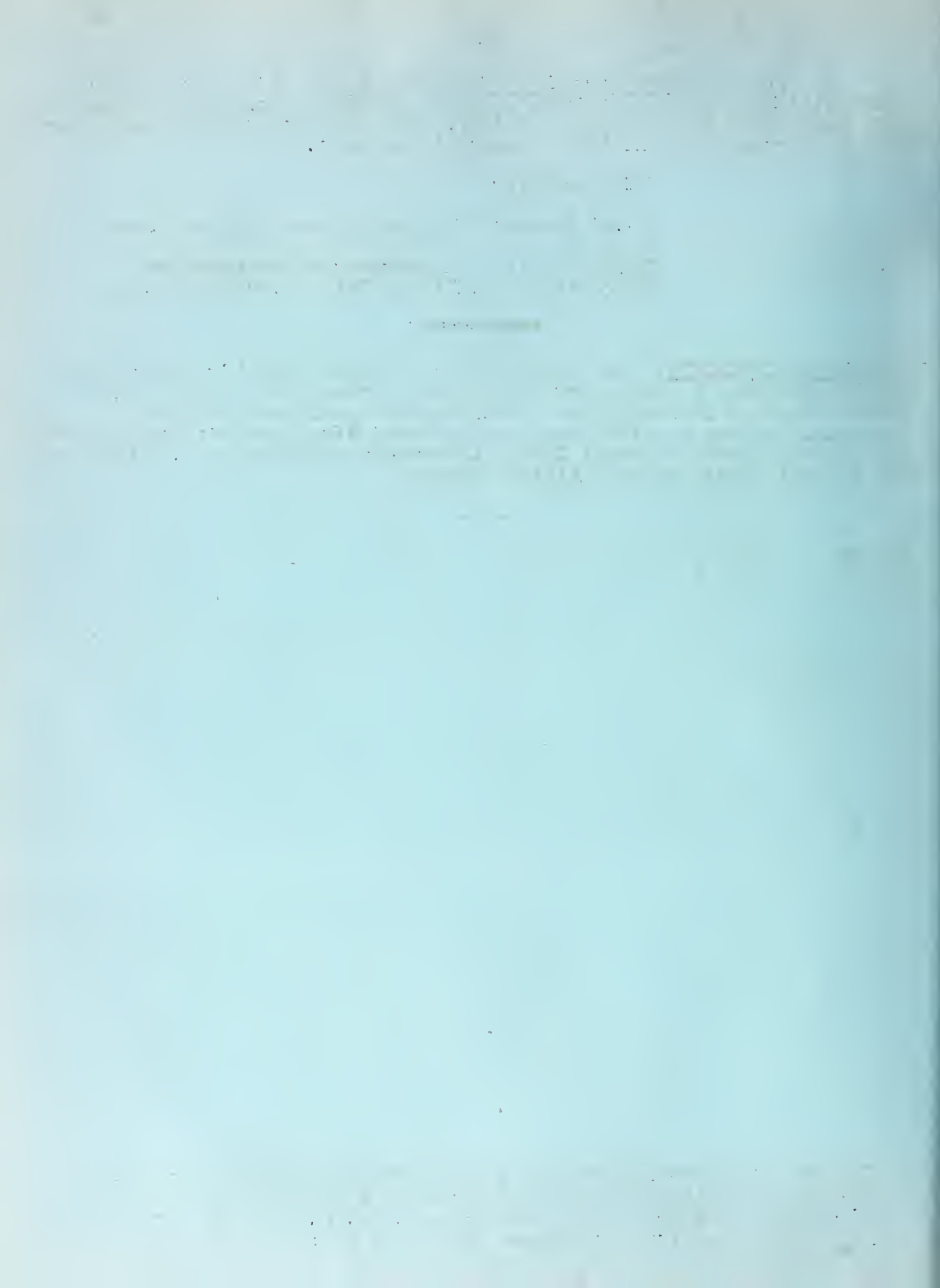
Dwight Powell, Department of Horticulture
University of Illinois College of Agriculture

CLOSING ANNOUNCEMENT: And with that we conclude today's spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Kentucky State Horticultural Society, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

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TNM:JE
7-14-44

Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois Collège of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Direcor
Acts approved by Congress May 8 and June 30, 1914



OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

- 1 - Paducah-Villa Ridge
- 2 - Carbondale-Vincennes-Henderson-
Louisville, Ky.
- 3 - Belleville-Hardin-Centralia

- 4 - Bedford-Lexington-S.W. Ohio
- 5 - Quincy-Pittsfield
- 6 - Peoria-Champaign-Lafayette
- 7 - Northern Illinois-Indiana

For the Paducah-Villa Ridge Area: Drouth conditions prevail except for scattered showers. Although codling moth attack has decreased somewhat with dry weather, attack may be severe right up to harvest. A good coverage of spray deposit must be maintained.

Curculio on peaches have decreased in numbers. In most orchards no further arsenical sprays or dusts are needed for curculio. Although Oriental fruit moth is not abundant, some damage may be expected. Larvae will be entering peaches approaching maturity in preference to peach twigs that are now hardening off. Preharvest oil dusts for control of Oriental fruit moth and brown rot should be started the week of July 23-29 on peaches to be harvested the week of July 30 to August 5.

For the Carbondale-Vincennes-Lexington-Louisville, Kentucky, Area; Belleville-Hardin-Centralia Area; Bedford-Lexington-Southwestern Ohio Area: Bait trap catches of codling moth have remained high, with new worms entering apples in large numbers. Infestation is now two to five times the June 20 level. A second peak of activity occurred within the past week, and rate of hatch in many orchards is now at the highest level attained this season. Hatch on late varieties located near Duchess or Transparent blocks is very high. Sprays, thoroughly applied, will be needed in most orchards at eight to 10-day intervals for factory-processed nicotine materials, and 10 to 14-day intervals for tank-mix nicotine bentonite or lead arsenate treatments throughout July and August.

Second-brood larvae are beginning to leave apples at Vincennes and Bedford, Indiana. Third-brood hatch should start about August 5. The third-brood attack in late August is expected to exceed that of 1943.

Curculio are decreasing on peaches and no further arsenical sprays or dusts are needed. Although Oriental fruit moth is light in most orchards, worms will enter maturing peaches in preference to hardened peach twigs. Preharvest oil dusts for control of Oriental fruit moth and brown rot should be started twenty days before peach harvest.

For the Quincy-Pittsfield Area; Peoria, Champaign-Lafayette Area: Bait and light traps took a large number of codling moth adults in the Pittsfield, Griggsville and Valley City region between July 11



and 18. A heavy hatch of worms should be expected during the remainder of July. A schedule of eight- to 10-day intervals for factory-processed nicotine materials and 10- to 14-day intervals for tank-mix nicotine bentonite or lead arsenate treatments may be necessary through July to mid-August.

For the Northern Illinois-Indiana Area: A few overwintering moths are still emerging from a cage at Rock Island. Some worms will be hatching from now until at least mid-August. Not more than two weeks should occur between sprays for the remainder of the season.

Compiled by:

M. D. Farrar, Illinois Natural History Survey

Dwight Powell, Department of Horticulture
University of Illinois College of Agriculture

CLOSING ANNOUNCEMENT: And with that we conclude today's spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Kentucky State Horticultural Society, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

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Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

- | | |
|--|---------------------------------|
| 1 - Paducah-Villa Ridge | 4 - Bedford-Lexington-S.W. Ohio |
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Louisville, Ky. | 5 - Quincy-Pittsfield |
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| | 7 - Northern Illinois-Indiana |

For the Paducah-Villa Ridge Area: Drouth conditions prevail except for scattered showers. Codling moth has increased over previous week. Remaining broods will probably overlap, as worms of all sizes are now found in fruit. Regular spray protection must continue in problem orchards.

In peach orchards, curculio and Oriental fruit moth continue light. Preharvest sprays or oil dusts containing sulphur are advised for protection of ripening fruit from Oriental fruit moth, brown rot and peach bitter rot. No poison need be added in these treatments.

For the Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area; Belleville-Hardin-Centralia Area; Bedford-Lexington-Southwestern Ohio Area: From 0.23 to one inch of rain was reported at Carbondale, Illinois, and Vincennes, Indiana, July 26. Codling moth adults continue to emerge in record numbers for the season. Fresh entrances of codling moth worms are reported throughout the area. Many worms permitted to enter now will mature early enough to produce third-brood worms. In most orchards continued spraying at 10- to 14-day intervals is advisable. Development is ahead of normal, and some fourth-brood worms should appear late in September. Growers with both apples and peaches should apply a spray just before peach harvest to protect the apples during peach harvest.

On peaches, curculio continue light, with no further poison treatments needed for control. Oriental fruit moth is light. Fruit approaching maturity should be protected by preharvest sprays or oil dusts containing sulphur for control of Oriental fruit moth, brown rot, and peach bitter rot. No poison need be added in these treatments.

For Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area: Rains of 0.5 to 1.6 inches have improved general orchard conditions. Codling moth catches continue high, particularly in the Pittsfield region. New entrances in many orchards indicate only continued heavy spraying will carry the crop through one of the most severe codling moth years. Spraying at 10- to 14-day intervals is advisable.

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For Northern Illinois-Indiana Area: Conditions have been favorable to codling moth development. In most orchards worms will be hatching in numbers for the next three weeks. Not more than two weeks should occur between sprays for the remainder of the season.

Compiled by:

M. D. Farrar, Illinois Natural History Survey

Dwight Powell, Department of Horticulture
University of Illinois College of Agriculture

CLOSING ANNOUNCEMENT: And with that we conclude today's spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Kentucky State Horticultural Society, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

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TNM:JE
7-28-44

Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

(Prepared by Illinois State Natural History
SPRAY SERVICE REPORT--No. 20 (Survey and Extension Service in Agriculture
(and Home Economics, University of Illinois
August 6 to August 12, 1944 (College of Agriculture, Urbana, Illinois

OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

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| 1 - Paducah-Villa Ridge | 4 - Bedford-Lexington-S.W. Ohio |
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Louisville, Ky. | 5 - Quincy-Pittsfield |
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For the Paducah-Villa Ridge Area: A heavy third-brood flight of codling moths is now under way. Worms from these moths will be hatching within four days after the eggs are laid. Third-brood attack is expected to be heavy and to continue up to harvest. Continued spraying is essential.

Elberta peach harvest will start in Western Kentucky August 3 to 4; Villa Ridge, August 5. Curculio are numerous in early ripening fruit, with the main crop expected to be of good quality. Brown rot is evident in most orchards. Growers are urged not to omit preharvest dust for control of brown rot and Oriental fruit moth.

For the Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area; Belleville-Hardin-Centralia Area; Bedford-Lexington-Southwestern Ohio Area: At Vincennes, Indiana, codling moth catches remain at a moderate level, although second-brood adults are now emerging. The rate of hatch has declined slightly but not enough to justify any extension of the normal 10- to 14-day interval between sprays. A very heavy third-brood hatch during the last half of August is still in prospect. Light trap catches at New Burnside indicate a moderate to heavy threat of worms for that region. Many new worms were observed entering fruit at Grafton, Illinois, July 31.

THE UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D. C. 20250



Elberta peach harvest will start about August 7 at Carbondale, August 8 to 10 at Vincennes, and August 15 to 20 at Centralia. A good crop of high-quality fruit is in prospect. Growers are urged to apply on peaches the preharvest dusts containing sulphur for the control of brown rot and Oriental fruit moth.

For the Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area: A heavy flight of moths continues in the Pittsfield region. Worms will be hatching daily. Complete coverage of the fruit is essential to protect the apple crop from late second-brood and early third-brood attack. Not more than 10- to 14-day intervals should occur between sprays.

For the Northern Illinois-Indiana Area: A moderate flight of adult codling moths was reported from Rock Island and Kankakee Counties during the past week. In orchards where worms are important, a good spray coverage must be maintained through the month of August.

Compiled by:

M. D. Farrar, Illinois Natural History Survey

Dwight Powell, Department of Horticulture, University of Illinois College of Agriculture

CLOSING ANNOUNCEMENT: And with that we conclude today's spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Kentucky State Horticultural Society, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

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Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 20, 1914

August 13-19

OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

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| 1 - Paducah-Villa Ridge | 4 - Bedford-Lexington-S.W. Ohio |
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Louisville, Ky. | 5 - Quincy-Pittsfield |
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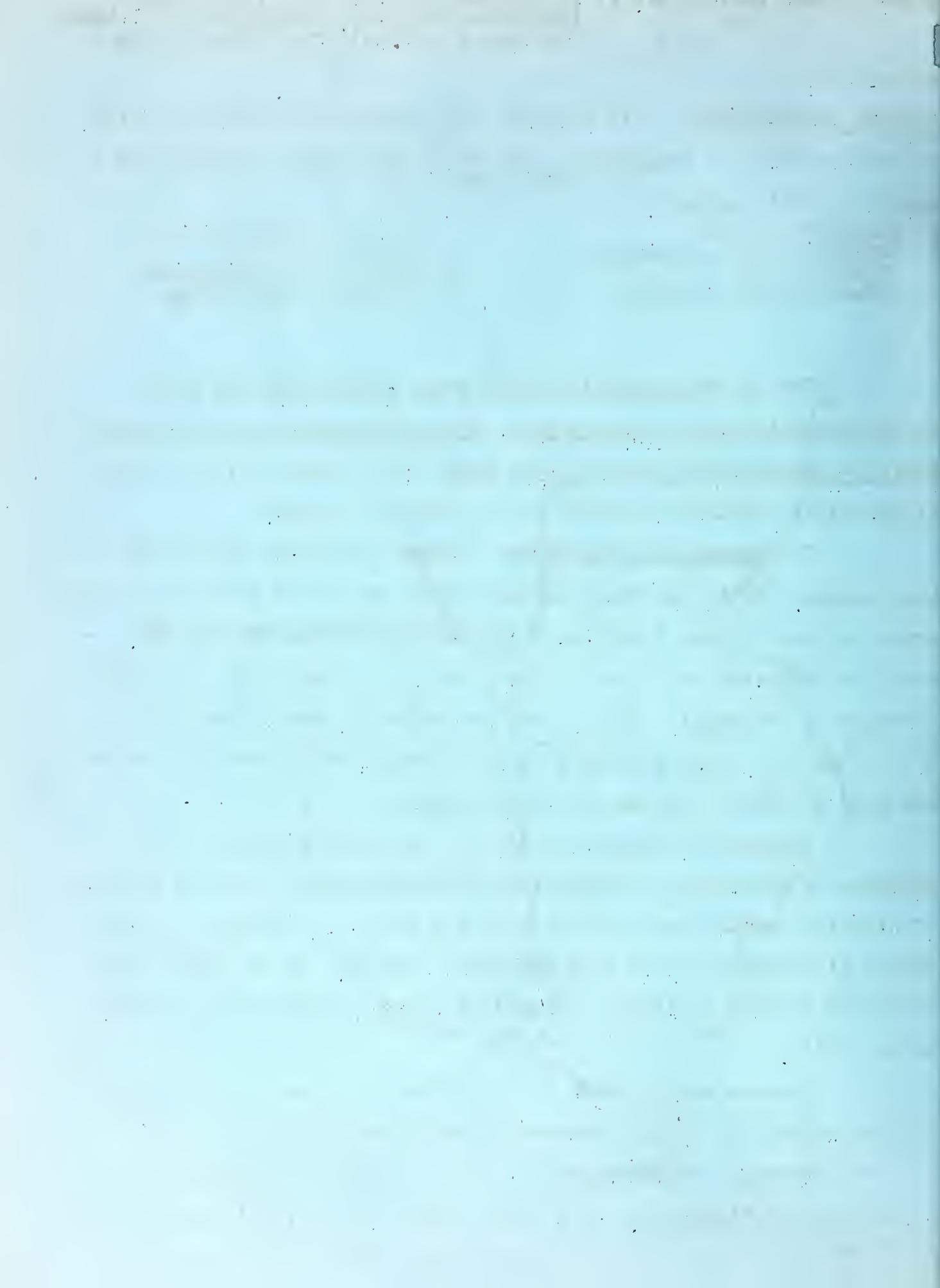
For the Paducah-Villa Ridge Area; Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area; Belleville-Hardin-Centralia Area; Bedford-Lexington-Southwestern Ohio Area: The drought persists with slight relief around Lexington, Vincennes, and Orleans.

The ~~second and third~~ brood flights of codling moths seem to have merged. Moths and newly hatched worms are on the increase in most areas and should show a continued increase for two or three weeks. Continued spraying at 10- to 14-day intervals is necessary. Complete coverage is essential. Where worms are abundant, one or two sprays will be needed before September 5, and winesaps and other late varieties may need an added spray about mid-September.

Growers using nicotine Bl. 155 are confronted with an acute shortage of materials. Every effort is being made to obtain a supply of nicotine sulphate, and many growers may find it desirable to switch to the nicotine-bentonite tank mix spray formula. If necessary, consult your experiment station entomologist for instructions and sources of bentonite.

Growers should watch for the first appearance of bitter rot and be prepared to apply recommended control measures.

Peaches: Peach harvest is in full swing from Kentucky to Carbondale and Vincennes. With minor exceptions, curculio and oriental



fruit moth infestations are light. Brown rot is evident in most orchards. Growers are urged not to neglect the applications of preharvest dusts containing sulphur for the control of brown rot and oriental fruit moth.

For the Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area: Worms are hatching daily and complete spray coverage at all times is essential. Growers who can find fresh injuries will need to apply one or two more sprays.

For the Northern Illinois-Indiana Area: Only moderate flights of codling moth are reported. In orchards where worms are prevalent, spray coverage is essential. Where the apple maggot is a problem, a lead arsenate spray, two pounds per 100 gallons, may be needed if the orchard is not sprayed for codling moth.

Compiled by:

G. C. Decker, Illinois State Natural
History Survey and Illinois Agricultural
Experiment Station

CLOSING ANNOUNCEMENT: And with that we conclude today's spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Kentucky State Horticultural Society, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

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Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

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August 20-26, 1944

OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

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| 1 - Paducah-Villa Ridge | 4 - Bedford-Lexington-S.W. Ohio |
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Louisville, Ky. | 5 - Quincy-Pittsfield |
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For the Paducah-Villa Ridge Area; Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area; Belleville-Hardin-Centralia Area; Bedford-Lexington-Southwestern Ohio Area: Apples--In Kentucky the third-brood of codling moths is continuing, with new entrances in many orchards. San Jose scale are multiplying rapidly in many orchards, both apple and peach. In Lawrence and Orange counties, Indiana, bait trap catches have fallen off the last few days with a heavy hatch of new worms expected this week.

At Vincennes a heavy drop has occurred during the last 10 days. Much of ~~this is wormy~~, but sound fruit is beginning to drop much earlier than usual. It is suggested that under such conditions, if cool weather does not occur, hormones be used in combination with the next codling moth sprays or applied alone if codling moth sprays are not necessary. Hormone sprays are considered effective in holding fruit on the tree for a period of 10 to 14 days and are more effective when applied during periods of high temperature. The codling moth situation is serious, with heavy third-brood hatch on the way this week. Additional sprays are recommended.

In southern Illinois, also, a heavy third brood is appearing. Because of the heavy drouth, sprays have not been too effective in orchards having high moth populations. Additional spraying is recommended. The Black Leaf 155 shortage still exists. Many growers, however, have been able to obtain Black Leaf 40. If possible to obtain the latter, it is recommended to use the tank-mix nicotine-Mississippi-bentonite oil formula. This is just as effective as the Black Leaf 155 and will allow many growers to finish the season with an effective nicotine schedule.

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Bitter rot infection has been light thus far. However, with the late scattered showers and rains in many areas, an increase in infection is expected. Bitter rot has been seen to infect fruit as late as September 7, so a constant watch is necessary in orchards where this disease has been prevalent in previous years.

Peaches: The peach harvest should be over in most areas within the next week or two. Curculio and Oriental fruit moth are light except in a few orchards. The important control measure now is the application of sulphur for brown rot.

Grapes: Concord grapes will be ready to harvest this week in the Lawrence-Orange counties, Indiana, area.

For the Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area: Worms are still hatching; thus it is necessary to continue spray protection. Heavy rains through most of this area have decreased infestation considerably.

For the Northern Illinois-Indiana Area: Most orchards should have received their last spray by this time. If worm entrance continues, however, additional sprays may be necessary.

Compiled by:

Dwight Powell, Department of Horticulture
University of Illinois College of Agriculture

CLOSING ANNOUNCEMENT: And with that we conclude today's spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Kentucky State Horticultural Society, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

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Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

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OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

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|--|---------------------------------|
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Louisville, Ky. | 5 - Quincy-Pittsfield |
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| | 7 - Northern Illinois-Indiana |

For the Paducah-Villa Ridge Area; Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area; Belleville-Hardin-Centralia Area; Bedford-Lexington-Southwestern Ohio Area: Apples--Although there has been a drop in codling moth activity over the past week due to rains and cooler weather, moths are still laying eggs on apples in large numbers. The hatch of worms is expected to continue through the harvest period of Jonathan and Grimes. In Kentucky, hatch is expected to continue for some time; in Jackson, Union and Johnson Counties, Illinois, beginning August 23, the heaviest hatch for the season is now under way. At Vincennes, Indiana, catches of moths in traps still remain at a high level. Worms are expected to continue to enter apples in numbers in the vicinity of Bedford, Indiana.

Where advisable, sprays applied during the next ten days should include one-half per cent oil to kill eggs on fruit. Growers should be on the lookout for bitter rot and, if an outbreak appears in the orchard, should apply at once the recommended strength of Bordeaux.

Peach harvest is over except for the northern section. San Jose scale has increased to destructive numbers in many peach orchards. An application of two per cent summer oil after the fruit has been harvested will reduce damage to trees by this insect but will not replace the application of a dormant oil spray for control.

THE STATE OF TEXAS

COUNTY OF _____



For the Quincy-Pittsfield Area; Peoria-Champaign-Lafayette

Area: There has been a reduction of codling moth activity over the past 10 days. However, moths are still flying in many orchards. Growers should watch closely for new entrances and apply sprays as needed to protect the fruit through harvest.

For the Northern Illinois-Indiana Area: The cold weather and rains over the past week should sharply reduce codling moth activity. If worm entrances continue, however, additional sprays may be necessary.

Compiled by:

M. D. Farrar, Research Entomologist
Illinois Natural History Survey

CLOSING ANNOUNCEMENT: And with that we conclude today's spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Kentucky State Horticultural Society, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

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Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914



OPENING ANNOUNCEMENT: It's time now for the last of the 1944 weekly spray service reports presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

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| 1 - Puducuh-Villa Ridge | 4 - Bedford-Lexington-S.W. Ohio |
| 2 - Carbondale-Vincennes-Henderson-
Louisville, Ky. | 5 - Quincy-Pittsfield |
| 3 - Belleville-Hardin-Centralia | 6 - Peoria-Champaign-Lafayette |
| | 7 - Northern Illinois-Indiana |

All Areas:

Insect Situation - General rains and cooler weather have reduced codling moth worm entrances. However, in orchards where late brood worms have become serious, new entrances can be observed daily. Third-brood larvae are now leaving apples, but most of them are expected to enter hibernation. At Vincennes, Indiana, the present rate of hatch is still extremely high. On August 28, as many as 40 fresh injuries per 100 apples could be found on some trees given 10 cover sprays of lead arsenate. Eggs are present in large numbers, and considerable hatch will occur during the harvest of midseason varieties. Growers should observe the fruit carefully for new entrances and be prepared to give additional protection to the crop where necessary. "Stop Drop" may be added to the late season codling moth sprays and the two applied together.

Disease Situation - Growers should be on the lookout for bitter rot, and, if an outbreak appears in the orchard, should apply at once the recommended strength of Bordeaux.

Final Report for 1944 Season - Through the cooperation of growers and state and federal agencies, spray service information has been compiled and released through 24 weekly reports, beginning March 24. Contributions from the following men have made these reports available:

State and federal agencies:

C. C. Allison, Plant Pathologist, Ohio State University,
Columbus, Ohio
H. W. Anderson, Department of Horticulture, University of
Illinois, Urbana, Illinois
W. D. Armstrong, Western Kentucky Agricultural Experiment
Station, Princeton, Kentucky
C. L. Burkholder, Purdue University, Lafayette, Indiana
S. C. Chandler, State Natural History Survey, Carbondale,
Illinois
J. J. Davis, Purdue University, Lafayette, Indiana
M. D. Farrar, State Natural History Survey, Urbana, Illinois
J. Edward Marshall, Indiana Agricultural Experiment Station,
Orleans, Indiana
T. H. Parks, Extension Entomologist, Ohio State University,
Columbus, Ohio
L. M. Pierce, U.S. Department of Agriculture Bureau of Plant
Industry, Vincennes, Indiana
Dwight Powell, Department of Horticulture, University of
Illinois, Urbana, Illinois
Paul O. Ritcher, University of Kentucky, Lexington, Kentucky
L. F. Steiner, U.S. Department of Agriculture Bureau of Ento-
mology and Plant Quarantine, Vincennes, Indiana

Growers in Illinois:

J. M. Ackles, Griggsville, Illinois
Jim Bright, Valley City, Illinois
W. L. Casper, Cobden, Illinois
Frank Chatten, Quincy, Illinois
Curt E. Eckert, Belleville, Illinois
L. A. Floyd, Greenville, Illinois
Harry Hatcher, Roodhouse, Illinois
Fred Hawkins, Texico, Illinois
Vilas Hensel, Princeton, Illinois
Bernard King, Moline, Illinois
John F. Leahr, Griggsville, Illinois
O. C. Metzler, Cobden, Illinois
Roy J. Newman, Martinsville, Illinois
Frank Penstone, Pittsfield, Illinois
C. E. Percel, Farina, Illinois
Chris Ringhausen, Jerseyville, Illinois
Paul Ringhausen, Hamburg, Illinois
William Simon, Batchtown, Illinois
L. M. Smith, Ozark, Illinois
C. E. Walkington, Tunnel Hill, Illinois

Compiled by:

M. D. Farrar

State Natural History Survey

CLOSING ANNOUNCEMENT: And with that we conclude another series of
Spray Service reporting.

EHR:JE 9-1-44

Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT--No. 1 (Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
(and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois)

March 25-31, 1945

March 23, 1945

OPENING ANNOUNCEMENT: And here we are with the first of the weekly spray service reports for 1945, presented in cooperation with federal agencies and a number of fruit growers.

General - The apple scab situation is critical throughout the entire fruit area. Abundant snow cover was favorable for the overwintering of scab fungus. Recent warm, rainy weather has caused rapid maturity of the scab spores. South of a line from Quincy, Illinois, to Lafayette, Indiana, ascospores were mature and discharging during the first two weeks of March. Apple scab infection has occurred or will occur wherever leaf or fruit buds have exposed new growth.

Both San Jose scale and aphids are abundant in this same area. Where no dormant sprays have been applied, a delayed dormant spray should be applied at once.

Codling moth carry-over is heavy, as there was little winter mortality.

Paducah-Villa Ridge Area: Peaches were in full bloom at Paducah, Kentucky, on March 21, and 10 per cent were in bloom at Villa Ridge, Illinois.

Apple scab threatens to be very severe, and growers should keep the new foliage well protected with sulphur sprays throughout the prebloom period. "Fermate" should be added where cedar rust is a problem. If the weather turns cool, more than the two recommended prebloom sprays should be applied.

Codling moth pupation was 6 per cent at Princeton, Kentucky, on March 21.



Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area:

Peaches were showing pink on March 21 at Carbondale. It is now too late to apply leaf curl sprays in this area. A survey shows 70 per cent of the peach orchards heavily infested with San Jose scale; over 50 per cent of the scale survived the past winter. Delayed dormant sprays are needed at once where a dormant spray has not been applied for San Jose scale.

Some varieties of apples had leaves $3/4$ inch long on March 21. Apple scab threatens to be very severe, and growers should keep the new foliage well protected with sulphur sprays. Where cedar rust threatens, "Fermate" should be added to the scab sprays.

Codling moth carry-over is heavy in this area, less ^{than} $1/6$ per cent of the worms were killed during the winter. Pupation has not occurred, although some larvae are preparing to pupate.

Belleville-Hardin-Centralia Area; Bedford-Lexington-Southwestern Ohio Area:

Peach buds are showing pink. Leaf curl sprays may be effective if applied at once. San Jose scale is reported as threatening.

Apple scab ascospores are mature and discharging. Extra scab sprays may be necessary during the prebloom period.

Aphids and San Jose scale are abundant, with dormant sprays necessary if not already applied. Codling moth carry-over is heavy, with little winter mortality. No pupation as yet.

Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area:

Peach buds are swelling, with a few showing pink in the southern part of the area. Peach leaf curl sprays should be applied at once.

Some varieties of apples show tip-green. Dormant sprays should be applied at once for scale and aphids. Because of the advanced stage of scab development, it is important that prepink sprays be started at



once. Spraying with sulphur should be continued throughout the prebloom period.

Northern Illinois-Indiana Area: Apple buds are still dormant. Dormant sprays should be applied at once where they are needed. It is anticipated that apple scab infection will occur as soon as the buds show green, provided the weather is rainy. It is advisable to start the prepink spray earlier than usual unless dry weather prevails.

Compiled by

M. D. Farrar, Illinois Natural History Survey

H. W. Anderson, Department of Horticulture, University of Illinois College of Agriculture

CLOSING ANNOUNCEMENT: That concludes the first weekly spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Kentucky State Horticultural Society, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

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EHR:pm
3/25/45

Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. E. P. Rusk, Director
Acts approved by Congress May 3 and June 30, 1914

SPECIAL WARNING ABOUT APPLE SCAB

The apple scab situation is critical at the present time. A good snow cover during the winter was favorable for the development of the scab fungus in the old leaves beneath the trees. Perithecia are very abundant in most areas. The recent warm, rainy weather resulted in rapid maturity of the ascospores, and by March 12 abundant ripe ascospores were found. This means that discharge of ascospores and infection will occur as soon as the buds burst, provided wet periods occur. Even heavy dews may result in infection.

Growers are advised to keep the expanding buds covered with sulphur sprays throughout the prebloom period. The prepink spray should already have been applied in Kentucky, southern Illinois and Indiana. It should be applied in central Illinois and Indiana as soon as possible, and in northern Illinois and Indiana as soon as green tissue is exposed.

H. W. Anderson, Department of Horticulture
University of Illinois College of Agriculture

FWA:pm

April 1-7, 1945

OPENING ANNOUNCEMENT: It's time now for another weekly spray service report presented in cooperation with state and federal agencies and a number of fruit growers.

SPRAY SERVICE REPORT AREAS

- 1 - Paducah-Villa Ridge
- 2 - Carbondale-Vincennes-Henderson-
Louisville, Ky.
- 3 - Belleville-Hardin-Centralia

- 4 - Bedford-Lexington-S.W. Ohio
- 5 - Quincy-Pittsfield
- 6 - Peoria-Champaign-Lafayette
- 7 - Northern Illinois-Indiana

General. All fruit bloom is at least two weeks ahead of normal. The rapid development of apples has prevented many growers from applying the recommended number of prebloom scab sprays. Every effort should be made to protect the foliage with sulfur sprays during the next week, since the scab situation is critical.

Paducah-Villa Ridge Area: Petals are off plums and peaches.

Apples will be ready for the calyx spray by April 1. Sulfur should be applied in the calyx and calyx top-off for protection against apple scab. For cedar rust and apple scab use "Fermate" as recommended.

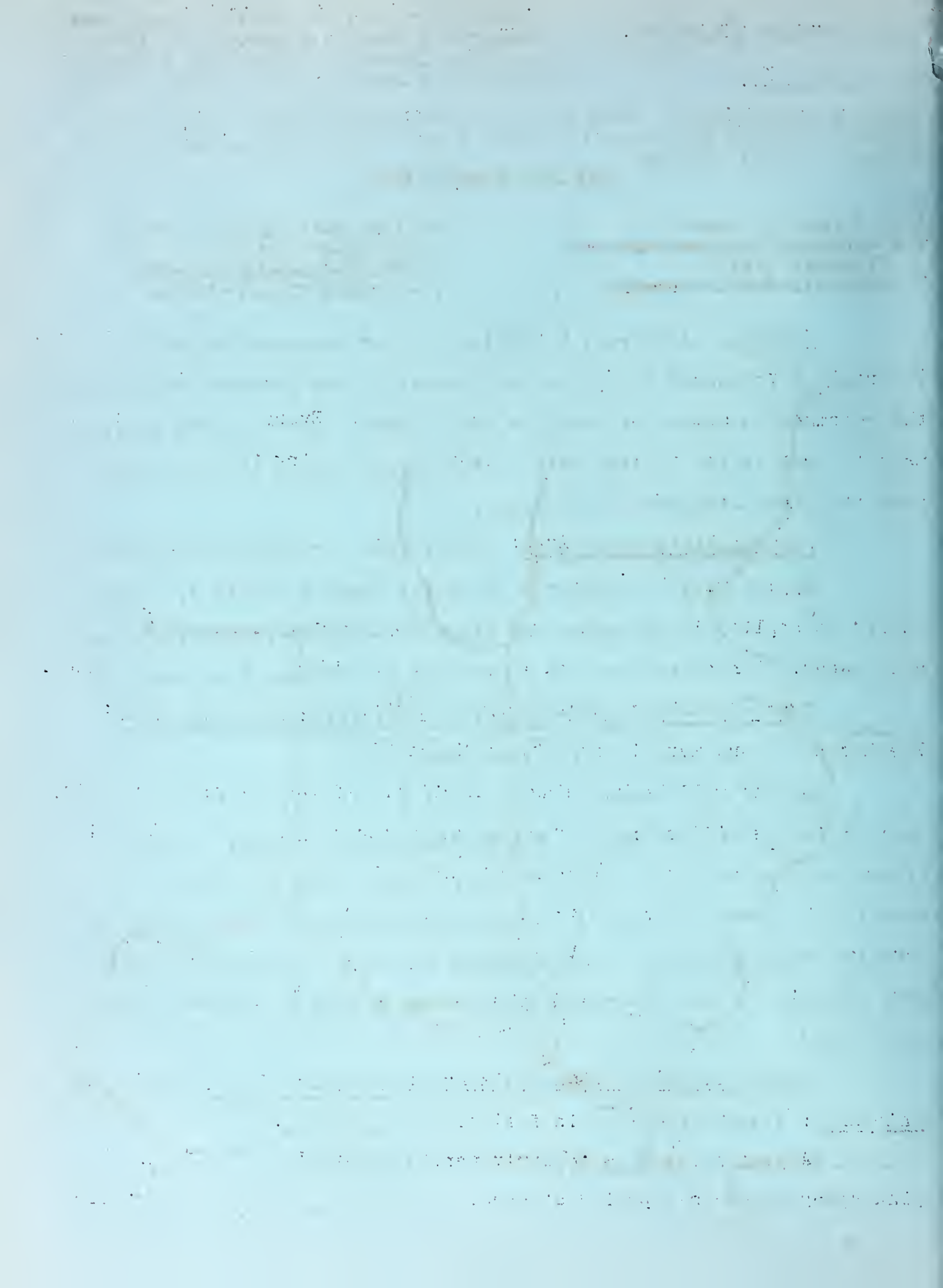
Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area:

Peaches and pears were in full bloom March 28.

Apples will be blooming by April 6. If warm weather prevails, many varieties will be ready for the calyx spray by April 7. A full bloom spray of wettable sulfur should be applied for control of apple scab if the period of bloom is prolonged. Sulfur should be continued into the calyx and calyx top-off sprays for scab protection. Codling moth pupation is just starting, and growers should be prepared for an early hatch.

Belleville-Hardin-Centralia Area; Bedford-Lexington-Southwestern Ohio Area: Peaches will begin full bloom by April 1.

Apples are pink with early varieties starting to bloom. The pink spray should be applied at once, followed by a spray of wettable



sulfur in the full bloom if the period of bloom is prolonged. The full bloom spray will be essential for scab control if the usual number of prepink and pink sprays were not applied.

Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area: Plums and apricots are in full bloom, with prospects of peach and pear bloom by April 4.

Apples are in the advanced prepink stage and will be in the pink stage by April 1. Weather conditions have been very favorable for apple scab development, with prospects of heavy prebloom infection. The pink spray should be applied as soon as possible and sulfur should be continued into the bloom period if the usual number of prebloom sprays have not been applied or if the bloom period is prolonged.

Northern Illinois-Indiana Area: Apples are prepink. At least two thorough applications of sprays for apple scab should be made preceding the bloom. Scab is apt to be severe with an unusual early infection if rainy weather continues. Thorough protection from apple scab will be necessary, with additional sulfur sprays required.

Compiled by:

M. D. Farrar, Illinois State Natural History Survey

H. W. Anderson, Department of Horticulture, University of Illinois College of Agriculture

CLOSING ANNOUNCEMENT: And with that we conclude today's spray service report presented in cooperation with fruit growers and federal and state agencies, including the agricultural experiment stations of Kentucky, Indiana and Illinois, the Kentucky State Horticultural Society, the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, and the Illinois State Natural History Survey.

EHR:pm
3/30/45

Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

April 8-14, 1945

(Prepared by Illinois State Natural History
 Survey and Extension Service in Agriculture
 (and Home Economics, University of Illinois
 College of Agriculture, Urbana, Illinois)

NARRATOR: Here's your spray service report, presented through the cooperative efforts of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky and the U. S. Department of Agriculture.

SPRAY SERVICE REPORT AREAS

- 1 - Paducah-Villa Ridge
- 2 - Carbondale-Vincennes-Henderson-Louisville, Ky.
- 3 - Belleville-Hardin-Centralia

- 4 - Bedford-Lexington-S.W. Ohio
- 5 - Quincy-Pittsfield
- 6 - Peoria-Champaign-Lafayette
- 7 - Northern Illinois-Indiana

General: Heavy rains during the past week have no doubt caused considerable apple scab infection. Growers are urged to continue sulfur applications. Dusting with sulfur is recommended as a supplementary measure if spraying is not possible. No damage to fruit buds has yet been reported from the late cold weather.

Paducah-Villa Ridge Area:

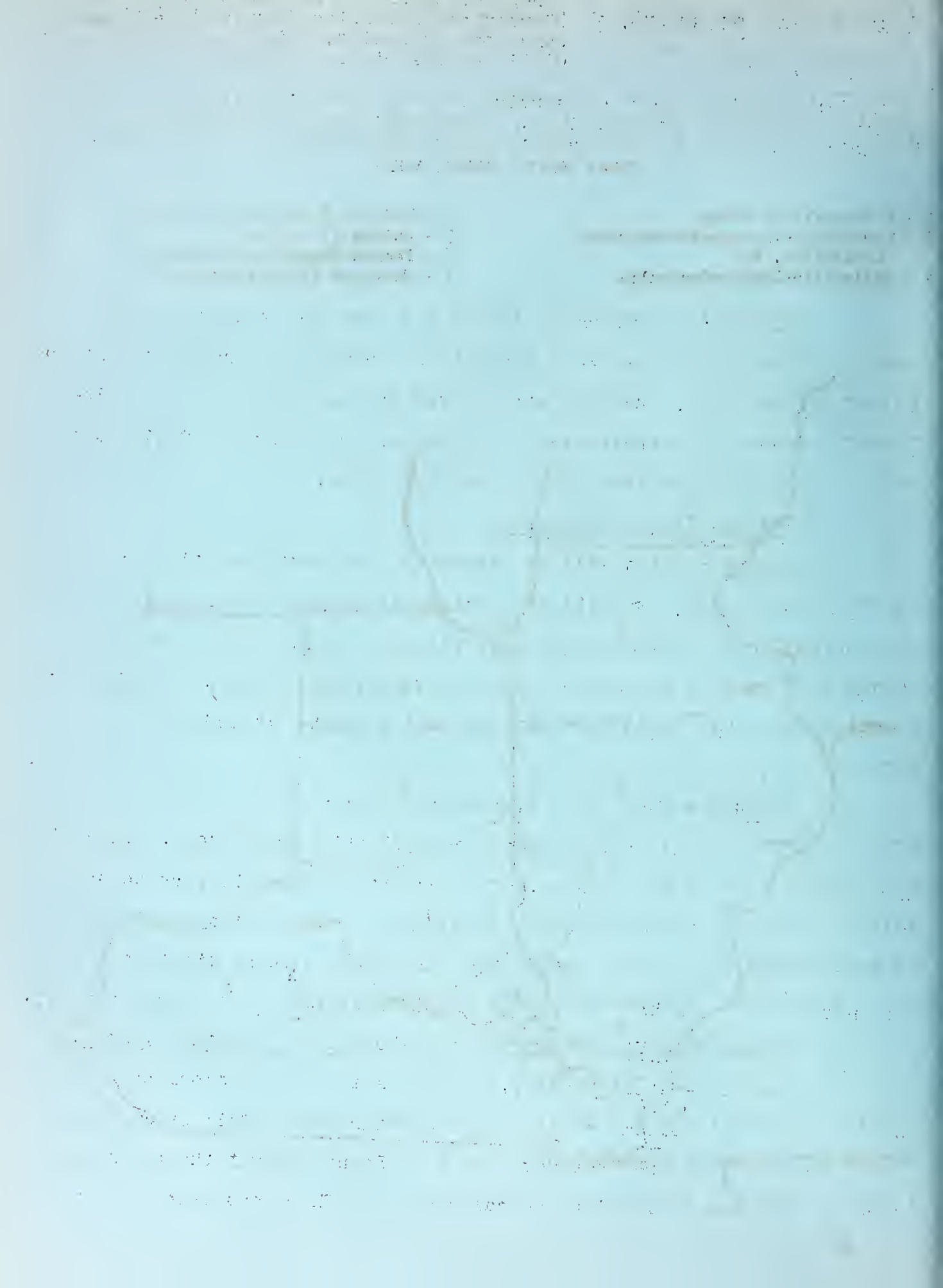
Apples - Petal fall is occurring, and most varieties are ready for the calyx spray. Conditions continue to be very favorable (for apple scab infections. No scab spots have yet been seen. Cedar rust and quince rust cankers have been observed discharging spores. Codling moth pupation continues rapid, with 52 per cent pupation at Princeton on April 4.

Peaches - Petal fall has occurred over most of Kentucky.

From Henderson south, young peaches are splitting the shucks. Curculios have been collected by jarring, but very little migration has occurred into the center of the orchards. Spraying or dusting the outside rows is recommended at an early date. The first curculio application should go on the entire orchard when about three-fourths of the shucks are off.

Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area:

Apples - At Carbondale, Delicious is in full bloom and Winesap about 60 per cent bloom. April 9 should start petal fall or calyx sprays unless cold weather retards development. Do not forget the calyx top-off spray immediately following the calyx spray. There has been no marked



advance in codling moth pupation since last week. There is still time to spray off the bark and thus destroy much of the codling moth population and prepare the trees for banding.

At Vincennes a heavy discharge of scab spores has occurred. Scab infection is not yet visible. The sulfur supply appears to be critically short. Most varieties are in full bloom. Codling moth pupation has reached as high as 40 per cent in some orchards (average about 25 per cent). Bait traps should be in operation by April 9 as some emergence may occur by April 10.

Peaches - At Carbondale all petals have fallen. Curculio jarring indicates that for the week of April 9 it would be advisable to spray the outer three or four rows to poison the beetles before they enter the orchard proper.

Belleville-Hardin-Centralia Area:

Apples - At Belleville and Centralia Winesaps are 75 per cent in bloom. No codling moth pupation found. At Hardin, Delicious is 25 per cent to 40 per cent in bloom, Grimes 60 per cent and Winesap 10 per cent. Codling moth pupation is about 15 per cent. No scab infection is visible. Full bloom spraying with wettable sulfur is recommended. Do not use lime-sulfur in the bloom. No damage has been reported from the April 5 temperature of 30°F.

Peaches - Petal fall has occurred.

Bedford-Lexington-Southwestern Ohio Area:

Apples - Winesaps are 60 per cent in bloom. Grimes will be ready for calyx spray by April 9. There is heavy bloom on most varieties. Rains this past week coupled with irregular spraying have increased the possible severity of scab. Liquid lime sulfur is recommended as best to use under such conditions to hold the scab in check.

Peaches - Petal fall has occurred on Gage Elberta.

Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area:

Apples - Most varieties are in early to full pink stage.

Weather conditions have been favorable for scab development. Protection can be best assured by keeping sulfur on the foliage at all times.

Peaches are approaching full bloom.

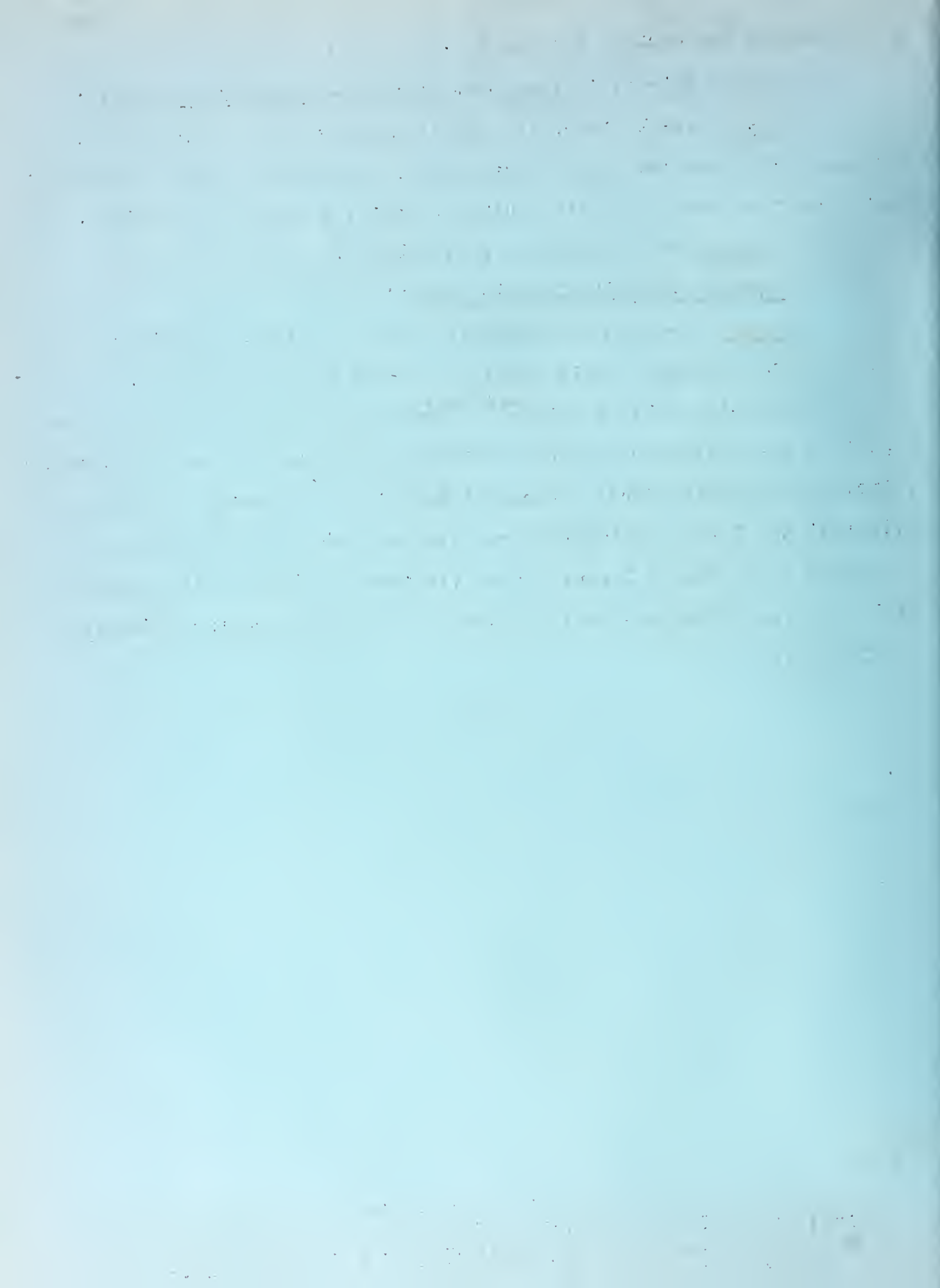
Northern Illinois-Indiana Area:

Apples are fast approaching the pink stage. Sulfur should be kept on the foliage at all times to prevent scab infection.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by Dwight Powell, Department of Horticulture, University of Illinois.

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DP:pm
4/6/45



April 15-21, 1945

NARRATOR: Here's your spray service report, presented through the cooperative efforts of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky and the U. S. Department of Agriculture.

SPRAY SERVICE REPORT AREAS

- 1 - Paducah-Villa Ridge
- 2 - Carbondale-Vincennes-Henderson-Louisville, Ky.
- 3 - Belleville-Hardin-Centralia

- 4 - Bedford-Lexington-S.W. Ohio
- 5 - Quincy-Pittsfield
- 6 - Peoria-Champaign-Lafayette
- 7 - Northern Illinois-Indiana

General: April 4-7, no commercial freeze damage on Illinois apples or peaches--strawberries injured. Lows in Indiana of 27° at Lafayette, 25° at Bedford, and 23° at Vincennes. Severe injury to early varieties in low spots, with complete kill in spots. A low of 22° reported in Virginia with severe injury to peaches and apples. Apple scab still threatens all commercial orchards. All expanding foliage needs continued protection from scab by sulfur sprays or dusts.

Paducah-Villa Ridge Area:

Apples are past calyx stage on most varieties. Top-off sprays should be completed by April 14. Codling moths are starting to emerge. The first cover spray should be started by April 16 and should include sulfur for apple scab.

Peaches - Shucks are off on most varieties. Curculio are reported mature and laying some eggs. Apply the shuck-fall curculio sprays at once over the entire orchard. A few Oriental fruit moths reported.

Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area:

Apples are dropping petals rapidly, with the calyx needed in most orchards by April 14. Many orchards will be ready for the calyx top-off spray after April 15. This spray should include sulfur for control of apple scab. Codling moth pupation exceeds 66 per cent, with an occasional emergence. First hatch of worms not expected before April 25.

Peaches - Shucks are splitting. Curculio are still on the edges of the orchards. Spraying or dusting of outer four rows recommended

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Two columns of handwritten notes, likely serving as a table of contents or a list of topics.

Main body of handwritten text, organized into several paragraphs. The text is written in a cursive script and covers the majority of the page.

where curculio are serious. General curculio spray should be delayed until shucks are off. Oriental fruit moth started to emerge at Vincennes April 9.

Belleville-Hardin-Centralia Area:

Apples will be ready for the calyx by April 12 and should be completed in most orchards by April 18. Primary scab infection reported at Hardin April 12. Calyx and calyx top-off sprays should contain sulfur for apple scab.

Peaches are through blooming. Curculio not yet reported.

Bedford-Lexington-Southwestern Ohio Area:

Apples - There is freeze injury in some orchards. This may delay petal fall in late bloom. Most varieties should receive the calyx spray between April 12 and 18. This and calyx top-off spray should contain sulfur for scab control.

Peaches - Petals are off. Curculio sprays should be delayed until most of the shucks are off.

Grapes should be sprayed for black rot when growth is two to four inches long.

Quincy-Pittsfield Area: Peoria-Champaign-Lafayette Area:

Apples will be full bloom by April 14. With good pollination weather, most varieties will be ready for the calyx by April 18. Scab infection reported and growers should plan to include sulfur in calyx and calyx top-off sprays for apple scab. Apple scab first observed in Urbana on April 12.

Peaches are in full bloom.

Grapes should be sprayed for black rot when growth is two to four inches long.

Northern Illinois-Indiana Area:

Apples are pink, with full bloom expected by April 20. A pink spray containing sulfur should be applied before the flowers open. If the bloom period is prolonged, a full bloom spray containing sulfur may be necessary. (Do not use lead arsenate in the full bloom spray.)

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar and H. W. Anderson of the Illinois Natural History Survey and the Department of Horticulture, respectively.

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Listen to the spray service broadcast by your favorite station (more stations to be reported):

Station	Location	K.C.	Day	Time	Cooperator
KFUC	St. Louis, Mo.	350	Fri.	7:30 a.m.	E. Knoerschild
KMOX	St. Louis, Mo.	1120	Mon.	6:00 a.m.	Ted Mangner
WAOV	Vincennes, Ind.	1450	Tues.	6:25 a.m.	V. H. Lund
			Thurs.	1:05 p.m.	Robert Pruett
WASK	Lafayette, Ind.	1450	Mon.	12:30 noon	B. A. Spring
WBAA	Lafayette, Ind.	920	Mon.	12:00 noon	Jim Miles
WCLS	Joliet, Ill.	1340	Mon.	6:40 p.m.	J. H. Brock
WEBQ	Harrisburg, Ill.	1240	Tues.	6:30 a.m.	Inglis M. Taylor
			"	12:00 noon	Ord Sitter
			Thurs.	6:30 a.m.	Inglis M. Taylor
WGBF	Evansville, Ind.	1280	Fri.	12:15 noon	Albert M. Bishea
WGRC	Louisville, Ky.	1400	Sat.	12:30 noon	C. M. East
WHEF	Rock Island, Ill.	1270	Tues.	6:15 a.m.	W. R. Taylor
WILL	Urbana, Ill.	580	Mon.	12:25 noon	Duke Regnier
WJBC	Bloomington, Ill.	1230	?	?	O. L. Welch
WJPF	Herrin, Ill.	1340	Tues.	12:45 noon	E. A. Bierbaum
			Fri.	"	G. J. Christenson
WLS	Chicago, Ill.	890	Mon.	12:15 p.m.	Arthur C. Page
WLW	Cincinnati, Ohio	700	M.W.F.	6:35 a.m.	Roy Battles
WMBD	Peoria, Ill.	1470	Tues.	5:45 a.m.	"Farmer" Bill
WOWO	Fort Wayne, Ind.	1190	Mon.	5:30 a.m.	Jay Gould
			Wed.	6:15 a.m.	" "
			Sat.	6:45 a.m.	" "
WTAD	Quincy, Ill.	930	Tues.	7:15 a.m.	Ray Hampton
WTHV	E. St. Louis, Ill.		Wed.	12:45 noon	B. W. Tillman

EHR:pm
4/13/45

April 22-28, 1945

NARRATOR: Here's your spray service report, presented through the cooperative efforts of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky and the U. S. Department of Agriculture.

SPRAY SERVICE REPORT AREAS

- | | |
|--|---------------------------------|
| 1 - Paducah-Villa Ridge | 4 - Bedford-Lexington-S.W. Ohio |
| 2 - Carbondale-Vincennes-Henderson-
Louisville, Ky. | 5 - Quincy-Pittsfield |
| 3 - Belleville-Hardin-Centralia | 6 - Peoria-Champaign-Lafayette |
| | 7 - Northern Illinois-Indiana |

General: Flums, early apples and some peaches were killed by the April 7 freeze in the area south of Spencer, Indiana, and Lancaster, Ohio, south to the Ohio river. The area of damage extended south and east into Virginia, where very heavy damage is reported. Rain with continued cold has retarded fruit development, particularly in central and northern Illinois and Indiana. Light frosts have occurred, damaging strawberries but causing little injury to tree fruits. Weather has favored development of apple scab, and growers should protect expanding foliage by fungicide sprays or dusts.

Paducah-Villa Ridge Area:

Peaches ⁷ ~~shucks~~ are off with the entire orchard needing protection from curculio. The spray applied following shuck fall should include sulphur ⁵ for control of peach scab ⁶. Curculio is less numerous than in 1944.

Apples are ready for the second cover spray. Codling moth emergence has been ³ heavy, with first worms expected about May 1. This spray should include a fungicide for control of apple scab ⁴.

Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area:

Peaches ² have rapidly increased in size. Growers should complete the shuck fall spray at once. Another spray or dust needs to be applied ten days after the shuck fall. This spray should include lead arsenate for curculio ¹ and sulphur for peach scab. Curculio is less numerous than in 1944.

Apple spraying has been delayed by continued cold and rain. A prolonged hatch of first-brood worms may be expected. In most orchards

Spray Service Report--No. 5, page 2.

additional protection is needed against apple scab through continued use of a fungicide. Sprays delayed by weather should be applied at once. Codling moth emergence started April 13 at Vincennes and April 15 at Carbondale. A light hatch may be expected by April 23 at Henderson. Sprays completed in the area by May 2 will protect against the first worms.

Belleville-Hardin-Centralia Area:

Apple spraying has been delayed by adverse weather. Apple scab remains a serious threat in many orchards. Sulphur should be continued until foliage is adequately protected. A large emergence of codling moth may be expected with warmer weather. Hatch of worms will not occur before the first week in May.

The peach shuck fall spray should be applied after all shucks are off.

Bedford-Lexington-Southwestern Ohio Area:

Freeze damage has been reported for this area on plums, early apples and peaches. Spray schedules will need to be adapted to fruit escaping frost. The calyx top-off or first cover spray is needed on most apple varieties. Sulphur should be included for control of apple scab. Peaches are ready for the shuck fall spray. No curculio reported.

Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area:

Apples have been in full bloom since April 16; pollination weather poor, with petals blown from the trees. Most apple varieties ready for the calyx spray after April 23. Codling moth pupation about 10 per cent. Sulphur should be included for control of apple scab.

Peaches are past bloom with no freeze damage reported.

Northern Illinois-Indiana Area:

Cold weather has delayed fruit development. A full-bloom spray containing sulphur is advisable against apple scab where the pre-bloom sprays were not adequate. (Do not use lead arsenate in the full-bloom spray.)

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar and H. W. Anderson of the Illinois Natural History Survey and the Department of Horticulture, respectively.

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Listen to the spray service broadcast by your favorite station (more stations to be reported):

Station	Location	K.C.	Day	Time	Cooperator
KFUC	St. Louis, Mo.	850	Fri.	7:30 a.m.	E. Knoerschild
KMOX	St. Louis, Mo.	1120	Mon.	6:00 a.m.	Ted Mangner
WAOV	Vincennes, Ind.	1450	Tues.	6:25 a.m.	V. H. Lund
			Thurs.	1:05 p.m.	Robert Pruett
WASK	Lafayette, Ind.	1450	Mon.	12:30 noon	B. A. Spring
WBAA	Lafayette, Ind.	920	Mon.	12:00 noon	Jim Miles
WOLS	Joliet, Ill.	1340	Mon.	6:40 p.m.	J. H. Brock
WEBQ	Harrisburg, Ill.	1240	Tues.	6:30 a.m.	Inglis M. Taylor
			"	12:00 noon	Ord Sitter
			Thurs.	6:30 a.m.	Inglis M. Taylor
WGBF	Evansville, Ind.	1280	Fri.	12:15 noon	Albert M. Bishea
WGRC	Louisville, Ky.	1400	Sat.	12:30 noon	C. M. East
WEBF	Rock Island, Ill.	1270	Tues.	6:15 a.m.	W. R. Taylor
WILL	Urbana, Ill.	580	Mon.	12:25 noon	Duke Regnier
WJBC	Bloomington, Ill.	1230	?	?	O. L. Welch
WJPF	Herrin, Ill.	1340	Tues.	12:45 noon	E. A. Bierbaum
			Fri.	"	G. J. Christenson
WLS	Chicago, Ill.	890	Mon.	12:15 p.m.	Arthur C. Page
WLW	Cincinnati, Ohio	700	M.W.F.	6:35 a.m.	Roy Battles
WMBD	Peoria, Ill.	1470	Tues.	5:45 a.m.	"Farmer" Bill
WOWO	Fort Wayne, Ind.	1190	Mon.	5:30 a.m.	Jay Gould
			Wed.	6:15 a.m.	" "
			Sat.	6:45 a.m.	" "
WTAD	Quincy, Ill.	930	Tues.	7:15 a.m.	Ray Hampton
WTMV	E. St. Louis, Ill.		Wed.	12:45 noon	B. W. Tillman
WBOV	Terre Haute, Ind.	1230	Mon.	11:20 a.m.	C. L. Brown

EHR:pm
4/20/43



April 29-May 5, 1945

NARRATOR: Here's your spray service report, presented through the cooperative efforts of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky and the U. S. Department of Agriculture.

SPRAY SERVICE REPORT AREAS

- | | |
|--|---------------------------------|
| 1 - Paducah-Villa Ridge | 4 - Bedford-Lexington-S.W. Ohio |
| 2 - Carbondale-Vincennes-Henderson-
Louisville, Ky. | 5 - Quincy-Pittsfield |
| 3 - Belleville-Hardin-Centralia | 6 - Peoria-Champaign-Lafayette |
| | 7 - Northern Illinois-Indiana |

General: From central Indiana-Illinois southward, the continued cold, rainy weather has not greatly reduced the normal development of the fruit. This period has been favorable for apple scab, and this disease still threatens apples in many orchards. Insect development for the past 10 days has been slow, but a rapid increase is expected with warmer weather. Over the central and northern fruit areas, apple scab control is of first importance now.

Paducah-Villa Ridge Area: Peaches, apples, plums and pears are all growing rapidly. Blackberries are blooming, with Blakemore strawberries ripening. Peaches should be protected against peach scab and curculio. First curculio larvae were observed on April 23.

Apple cover sprays should be applied to give adequate protection against codling moth through the month of May. A heavy hatch of worms is expected after April 29. Growers using a lead arsenate schedule should now include weak Bordeaux in all sprays.

Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area: Peaches are growing rapidly. Ten days after the shuck-fall spray, apply a sulphur-lead arsenate spray or dust for the control of peach scab and curculio. At least 10 days should be allowed between the second and third peach sprays.

Apple scab is serious in many orchards, and growers should include a fungicide in the early cover sprays. This may delay the use of oil as an ovicide until the third cover. At least two cover sprays should be applied by May 6 to protect the fruit against a moderate hatch

of worms after April 29. The next period of warm weather will be accompanied by a sharp increase in codling moth emergence and a heavy egg deposition.

Belleville-Hardin-Centralia Area: Peaches are ready for the 10-day peach scab--curculio spray that should include both sulphur and lead arsenate.

Apple scab is most important in apple orchards, with a fungicide needed in the next spray. Fruit should be protected against codling moth worms within 10 days after warmer weather. Pupation is over 50 per cent.

Bedford-Lexington-Southwestern Ohio Area: Peaches are ready for the 10-day spray for control of peach scab and curculio. This spray should include both a fungicide and a poison. Lead arsenate, zinc sulphate and lime are recommended for Indiana.

Codling moths are emerging in small numbers, particularly near packing sheds. As soon as it warms up, a heavy emergence may be expected.

Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area: Apple bloom has been prolonged by weather. Most varieties are ready for the calyx and calyx top-off sprays. The first cover spray may be needed before May 5 in some orchards. Most growers should include a fungicide in the first cover spray and delay the use of oil as an ovicide until the third cover unless "Fermate" is used as the fungicide.

Northern Illinois-Indiana Area: Apples will be ready for the calyx spray this week if the weather turns warm. A fungicide should be included in at least two more sprays for the control of apple scab.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar and Dwight Powell of the Illinois Natural History Survey and the Department of Horticulture, respectively.

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EHR:pm
4/27/45



SPRAY SERVICE REPORT--No. 7

May 7-12, 1945

NARRATOR: Here's your spray service report, presented through the cooperative efforts of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky and the U. S. Department of Agriculture.

SPRAY SERVICE REPORT AREAS

- 1 - Paducah-Villa Ridge
- 2 - Carbondale-Vincennes-Henderson-Louisville, Ky.
- 3 - Belleville-Hardin-Centralia

- 4 - Bedford-Lexington-S.W. Ohio
- 5 - Quincy-Pittsfield
- 6 - Peoria-Champaign-Lafayette
- 7 - Northern Illinois-Indiana

General: Cool weather has delayed codling moth hatch in the southern areas. Scab continues to develop and in general is more severe in well-sprayed orchards than for many years. Fruit development has been retarded by cool weather, with considerable damage due to frost. Curculio is very light this year with very little migration to the center of the orchard thus far.

Paducah-Villa Ridge Area:

Apples - W. D. Armstrong reports codling moth emergence light. A few eggs have been deposited, but hatch has not occurred. Scab is very severe. A 1-2-100 Bordeaux is recommended in Kentucky as the arsenical safener and fungicide for scab control. In more seriously infected orchards a 2-4-100 or even a 4-6-100 Bordeaux may be necessary in regular codling moth sprays to prevent scab development on the fruit.

Peaches - Curculio jarring indicates that very small numbers are entering the orchard. Warm weather might increase the orchard population and thus demand an additional spray. Continued jarring and orchard inspection are recommended.

Strawberries - An occasional strawberry is ripening on Blakemore in the Lexington area, while light packing has been under way since April 27 in the western Kentucky region.

Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area:

Apples - At Carbondale, S. C. Chandler reports that codling moth emergence has been light, with very little egg-laying. Oil is not so important at this time. Dwight Powell reports secondary scab prevalent in many sprayed orchards. Either Fermate, $\frac{1}{2}$ pound, or

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$\frac{1}{2}$ -1-100 Bordeaux should be included in the regular cover sprays for scab control. Fireblight is now appearing on Transparent. Blotch infection has not been seen; however, blotch sprays of either Fermate, 1 pound, or 4-6-100 Bordeaux are recommended in the next cover spray on blotch-susceptible varieties. Cedar rust infection is severe in certain orchards.

At Vincennes, L. F. Steiner reports some codling moth egg-laying during the daytime. Moth trap catches have been light and no heavy emergence has occurred in orchard cages. No hatch will occur before May 5 or later. Some eggs have been in the red ring stage for a week or more. Very heavy oviposition is expected with the first appearance of warm weather. The red mite population is extremely low in orchards which were given a dormant spray. Mr. Leslie Pierce reports that scab spores are still being discharged during rainy periods from the same overwintering leaves from which the earliest ascospores appeared. Infection is now appearing in many well-sprayed orchards.

Peaches - At Carbondale, S. C. Chandler reports that the curculio population is very low in the peach orchards. A light peach schedule is recommended under these conditions with sprays or dusts coming at longer intervals than in years of more severe infestation. Oriental fruit moth has not yet appeared. This situation indicates a very light infestation again this season, since conditions are right and time is past for the first appearance.

According to A. S. Colby, the first prebloom spray should be applied to raspberries this week.

Belleville-Hardin-Centralia Area:

Apples - Codling moth development has been hindered by cool weather. Scab is developing in many well-sprayed orchards. If scab is serious, growers should use their judgment on the suitable fungicide. Oil for codling moth may not be needed for two weeks yet, in which case sulfur may still be applied. Bordeaux at this time is likely to russet, particularly Jonathan and Golden Delicious. Fermate would be desirable to use if it can be obtained.



Peaches - Jarring and orchard inspections are recommended to determine the curculio population. Thus far curculio is light; therefore a heavy schedule should not be anticipated.

Bedford-Lexington-Southwestern Ohio Area:

At Lexington, P. O. Ritcher reports cool weather with light frosts but no damage caused. Peaches are about one inch long. Codling moth emergence is light, with the weather too cool for much egg-laying. In Lawrence and Orange counties, Indiana, G. Edward Marshall reports that apple foliage is poor as a result of excessive lime-sulfur sprays which have been necessary for scab control. No codling moth hatch has occurred to date; however, a few worms are expected to appear by May 10. Cool weather has prevented much egg-laying. Eggs which have been deposited are not incubating. Oriental fruit moth is abundant on wing, but no twig injury by larvae has been seen in commercial orchards. At least one curculio spray should have been applied on peaches by this date. Another application should be made in about a week or 10 days or when jarring indicates sufficient numbers of curculio to warrant another spray. A high percentage of strawberry blooms have been injured by heavy frosts.

Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area:

Very little fruit development is occurring. Scab is the main problem to consider, and a fungicide should be included in the cover sprays. Fermate, if obtainable, is best to use now. If applied now, $\frac{1}{2}$ -1-100 Bordeaux would aid in scab control, but would also probably cause injury. With codling moth development retarded by cool weather, oil may not be necessary for two weeks yet, in which case sulfur might still be applied.

Northern Illinois-Indiana Area:

M. D. Farrar reports from Barrington that apples are still in the calyx. Heavy frost damage has occurred. Continuous rains have increased scab damage. A full-strength sulfur spray should be used to prevent further infection.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar and Dwight Powell of the Illinois Natural History Survey and the Department of Horticulture, respectively.

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Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

May 13-20, 1945

NARRATOR: Here's your spray service report, presented through the cooperative efforts of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky and the U. S. Department of Agriculture.

SPRAY SERVICE REPORT AREAS

- 1 - Paducah-Villa Ridge
- 2 - Carbondale-Vincennes-Henderson-Louisville, Ky.
- 3 - Belleville-Hardin-Centralia

- 4 - Bedford-Lexington-S.W. Ohio
- 5 - Quincy-Pittsfield
- 6 - Peoria-Champaign-Lafayette
- 7 - Northern Illinois-Indiana

General: Weather over the entire area has been cold and wet, favoring the continued development of apple scab. Very little insect activity has occurred. Codling moth emerged May 6-7 in numbers through Kentucky, southern Illinois and Indiana. Codling moth emergence will increase rapidly with warmer weather. Adequate protection of the fruit will be needed by that time.

Paducah-Villa Ridge Area: W. D. Armstrong reports apple scab increasingly serious in many sprayed orchards. Where bitter rot has caused damage in past years, a control should be started by mid-May. Scab control is more important now than is the need for an oil as a codling moth ovicide in the next spray. Include oil at least two weeks after the last sulphur to avoid spray burn. Fruit should be well protected against worms with sprays at seven- to 10-day intervals.

Curculio are light on peach. Further control measures can be delayed.

Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area: A light hatch of worms is expected before May 15. S. C. Chandler reports many orchards ready for the fourth cover spray, with apple scab still a threat. A mild fungicide may be important in many orchards this week. One-half pound Fermate will avoid danger from sulphur-oil injury where it is necessary to include summer oil as a codling moth ovicide.

L. F. Steiner states the only safe procedure to follow is to keep the fruit well protected with spray material until warm, settled weather begins. The interval between sprays can be lengthened two or three days.

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Curculio continue light in peach orchards.

Belleville-Hardin-Centralia Area: S. C. Chandler reports very little emergence of codling moth. Orchards ready for the third cover, with apple scab still the most important threat to apples. Growers should use judgment on omitting a fungicide. One-half pound of Fermate will serve as a fungicide. The use of summer oil can be delayed for a week or more or until codling moths are laying eggs rapidly.

Curculio are scarce in peach orchards.

Bedford-Lexington-Southwestern Ohio Area: Except for a light emergence of codling moths May 7-8, activity has been at a standstill. G. E. Marshall states that a cover spray for codling moth should be applied between May 11 and 16, with a mild fungicide such as a wettable sulphur included for apple scab. Codling moths will increase in numbers rapidly with warmer weather.

Both Oriental fruit moth and curculio are very light in peach orchards.

Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area: Fruit development has been slow, with some varieties just past the calyx stage. Apples will be ready for the second cover at Quincy and first cover at Nauvoo this week. Grapes at Nauvoo are about ready for the second-cover spray, according to S. C. Chandler.

Apple scab is serious throughout both areas, and a fungicide should probably be included unless the orchard is adequately protected by a fungicide. Codling moth emergence has only barely started, with no heavy hatch of worms expected for at least two weeks. Orchards following a split lead arsenate-nicotine schedule may continue the lead arsenate without nicotine one additional spray.

Northern Illinois-Indiana Area: Fruit has developed but little during the past week. Although the crop may have been lost through frost damage, sprays should be continued against apple scab. Protection of the foliage against scab is essential if the orchard is to bear a crop in 1946.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar of the Illinois Natural History Survey.

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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

May 17-23, 1945

NARRATOR: Here's your spray service report, presented through the cooperative efforts of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky and the U. S. Department of Agriculture.

SPRAY SERVICE REPORT AREAS

- 1 - Paducah-Villa Ridge
- 2 - Carbondale-Vincennes-Henderson-
Louisville, Ky.
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- 4 - Bedford-Lexington-S.W. Ohio
- 5 - Quincy-Pittsfield
- 6 - Peoria-Champaign-Lafayette
- 7 - Northern Illinois-Indiana

General: Apple scab is causing heavy damage to foliage in all but very well-sprayed orchards. The continued use of a fungicide is needed until continuous rains cease. In southern Indiana, Illinois and Kentucky, codling moths will emerge rapidly with warm weather. Heavy egg laying may be expected within a week after the first warm days. Scab control is of first importance in central and northern Illinois and Indiana. Codling moth worms will not be active for at least two weeks in these areas.

Paducah-Villa Ridge Area; Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area; Belleville-Hardin-Centralia Area; Bedford-Lexington-Southwestern Ohio Area: Apple scab is serious. A hopeless situation already exists in some commercial orchards. A Bordeaux fungicide spray is needed in most orchards, varying from a 1/2-1-100 weak Bordeaux to 4-6-100 full strength Bordeaux, the amount depending on the scab condition in the orchard. Fruit is growing rapidly, and full protection against codling moth will be needed at all times for the next three weeks. A moderate emergence of moths occurred on May 14 and 15. Emergence is 50 per cent complete at Vincennes, with 1/3 of the worms not yet pupated, according to Steiner. A heavy hatch of worms may be expected a week after the first warm days in all orchards where codling moths were destructive last season.

Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area:

Apple scab is threatening many commercial orchards. It is suggested that growers apply sprays containing a wettable sulphur fungicide for

scab control without the addition of an insecticide until the period of continuous rain is broken.

Codling moths are pupating rapidly, with about 50 per cent pupated in cages at Urbana. Very few moths have emerged. With warmer weather, growers should apply insecticides for the protection of fruit against a heavy hatch of worms the last week in May.

Northern Illinois-Indiana Area: Heavy freeze damage caused a severe loss in the crop. A program of scab control should be maintained until this disease is under control. No codling moth activity has been reported to date.

The following was issued to growers in Indiana and applies equally well to conditions that exist in Illinois orchards:

IMPORTANT - Regarding Your Apple Spray Program

Dear Fruit Grower:

The weather this spring has certainly "messed up" our apple spray programs. Bloom occurred ahead of schedule and apple scab is serious, but cool, wet weather is holding back codling moth development. For example, some central Indiana growers are ready for their fourth cover spray, with the codling moth still in the pupa stage, which means that additional first-brood cover sprays will be necessary to take care of the worms when they do make their appearance.

No one has all the answers in a year like this, but here are a few suggestions: Southern Indiana (3-Brood Area) -- Some hatch of codling moth eggs began May 9, but egg development and moth activity is below normal. Keeping in mind the serious codling moth situation in southern Indiana, the only safe procedure for growers to follow is to keep the fruit well protected with spray material. Until warm, settled weather begins, however, the interval between sprays can be lengthened a few days. Extra first-brood sprays will be necessary in order to keep the fruit protected during the entire period of first-brood hatch.

Central and Northern Indiana (2-Brood Areas) -- If apple scab is not under control, spraying at seven- to 10-day intervals should be continued, using lead, lime and wettable sulphur. Oil is not likely to be needed for at least two weeks in central Indiana and probably not for three weeks in the northern part of the state. At least 14 days should elapse before applying oil on sulphur residues.

Weak Bordeaux is also a good fungicide, and growers having a codling moth problem can use oil sooner by turning to lead and weak Bordeaux for the cover spray preceding the use of summer oil. Bordeaux, however, may increase russetting if applied within three weeks of petal fall and may russet Golden Delicious at any time.

Growers who are confident that apple scab is under control can "sit tight" and wait for the codling moth to catch up. Growers who follow this procedure, however, should make certain that a spray application preferably with oil is applied at the beginning of egg hatch and another seven to 10 days later. These two applications should be made regardless of the number of sprays applied up to that time.

Apparently plum curculio is not yet causing any appreciable damage to plums and cherries, but this pest should be taken in consideration and lead arsenate applied if and when curculio makes its appearance.

Very truly yours,
/s/ G. E. Lehker
G. E. Lehker
Ass't in Entomology

/s/ C. L. Burkholder
C. L. Burkholder
Ass't Chief in Horticulture

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar of the Illinois Natural History Survey and Dwight Powell, Department of Horticulture, University of Illinois College of Agriculture.

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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. F. Rusk, Director
Acts approved by Congress May 8, and June 30, 1914

May 28-June 2

NARRATOR: Here's your spray service report, presented through the cooperative efforts of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky and the U. S. Department of Agriculture.

SPRAY SERVICE REPORT AREAS

- | | |
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| 1 - Paducah-Villa Ridge | 4 - Bedford-Lexington-S.W. Ohio |
| 2 - Carbondale-Vincennes-Henderson-
Louisville, Ky. | 5 - Quincy-Pittsfield |
| 3 - Belleville-Hardin-Centralia | 6 - Peoria-Champaign-Lafayette |
| | 7 - Northern Illinois-Indiana |

General: Cool rainy weather has retarded codling moth development. It is probable that peak emergence of moths occurred between May 21 and 24 in Kentucky, extreme southern Illinois and Indiana. A heavy hatch of worms should be expected there around June 1. North of Vincennes to Carbondale emergence has been slow. Overwintering worms have largely pupated, indicating that a very heavy flight may be expected on the first warm days. Eggs will be hatching two weeks after the moths emerge. Fruit is still very small, indicating that lead arsenate and oil can be continued much later into the schedule than usual without the mature fruit exceeding residue tolerances. Apple scab control should be continued where needed.

Paducah-Villa Ridge Area: Codling moths have been emerging in numbers over the past week. Adequate protection is needed on apples by May 28. Weak Bordeaux should replace sulphur for scab control, with 4-6-100 Bordeaux applied on varieties subject to bitter rot. An ovicide of oil may be added to the codling moth spray at the time codling moth eggs are abundant on the fruit, probably about June 4-9, or sooner if needed.

Carbondale-Vincennes-Henderson-Louisville, Kentucky Area: Codling moth emergence has been slowed down by weather, but a rapid pick-up occurred after May 19. This will extend the first-brood hatch longer than usual. According to Steiner (Vincennes), wormy apples were found at Henderson May 21, with mature larvae expected to leave the fruit by June 10. At Vincennes spring brood activity is now at its peak.

eggs have been hatching in 12 days, but will hatch in four or five days in warm weather. If the present warm weather continues, first-brood hatch should reach its peak about June 1. Chandler (Carbondale) reports much lighter emergence of codling moths, with the peak still to come in western Illinois. Pupation, however, is high and moths will emerge rapidly when they start. Weak Bordeaux should replace sulphur for scab control, especially where oil will be used early in June.

Peach thinning will remove most curculio-infected peaches. Oriental fruit moths are light.

Belleville-Hardin-Centralia Area: Approximately 5 per cent of the codling moths have emerged in cages with first eggs observed at Grafton by Chandler May 23. Growers should change from sulphur to weak Bordeaux for apple scab if they plan to use oil with lead arsenate early in June. The fruit is relatively small, so that lead arsenate may be used later than usual.

Bedford-Lexington-Southwestern Ohio: Codling moths began to emerge at Lexington, Kentucky, in numbers May 16. The peak of emergence is probably at hand, according to Marshall (Bedford). Although scab is still serious, growers will have to choose between the continued use of sulphur or the change over to weak Bordeaux for scab control. After the last sulphur spray, oil should not be added to the codling moth spray for at least two weeks. Apples should be protected against a heavy hatch of worms around June 1.

Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area: A number of codling moths have been caught in traps at Pittsfield this week, indicating that some moths are laying eggs. Pupation is high and a heavy flight of moths may be expected after a few warm days. Weak Bordeaux should be substituted for sulphur where oil is to be included in the codling moth spray early in June. Because of the small size of the fruit, lead arsenate may be used in the schedule longer than usual this season.

Northern Illinois-Indiana Area: Scab sprays should be applied where needed. Codling moth activity has not started yet.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar of the Illinois Natural History Survey and Dwight Powell, Department of Horticulture, University of Illinois College of Agriculture.

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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

NARRATOR: Here's your spray service report, presented through the cooperative efforts of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky and the U. S. Department of Agriculture.

SPRAY SERVICE REPORT AREAS

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| 1 - Paducah-Villa Ridge | 4 - Bedford-Lexington-S.W. Ohio |
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Louisville, Ky. | 5 - Quincy-Pittsfield |
| 3 - Belleville-Hardin-Centralia | 6 - Peoria-Champaign-Lafayette |
| | 7 - Northern Illinois-Indiana |

General: The hatch of codling moth worms will be heavy over the entire area during the second week of June. All apples will need adequate protection for at least two more weeks. An ovicide of oil may be helpful, although considerable injury has been reported from the use of sprays containing an oil where they have been applied on foliage carrying considerable residue of sulphur. The danger from apple scab is about past except in the northern portions of Illinois and Indiana. On varieties subject to blotch or bitter rot, use full strength Bordeaux for control. Apply treated⁷ codling moth bands at once in southern Indiana-Illinois areas.

Paducah-Villa Ridge Area: Red Bird apples and Mayflower peach are now being harvested in western Kentucky, with the harvest of Transparent apples and Red Bird⁶ peaches expected to start about June 11-12. Codling moths are in all stages, with some worms three-fourths grown. Although first-brood³ worms are tapering off, continued protection is needed. A hatch of worms in ripening Transparent⁴ apples should be expected and controlled. Treated bands should be applied now.

Considerable foliage injury² has occurred on peaches sprayed with lead arsenate; further treatments probably are not needed until the preharvest sprays.

Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area:
Codling moth activity has been heavy over this area. Eggs are hatching in seven days. Emergence is dropping off in some sections, with heavy

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emergence still occurring in the vicinity of Carbondale. Heavy applications of insecticides are advisable where codling moths have been severe. Transparent apples should be protected against worms entering fruit just previous to harvest, which will start about June 12.

Arsenical injury to peach is causing considerable damage to foliage. Further use of arsenical sprays or dusts should be confined to the edges of the orchard where most of the curculios are found.

Belleville-Hardin-Centralia Area: Moth emergence at Grafton has increased from 10 to 25 per cent during the past week, with an increase of 10 per cent in wormy apples on unsprayed fruit. A heavy attack of worms may be expected for at least two more weeks. Use of oil in the spray is advisable in problem orchards or where there is a minimum of danger from using oil following recent applications of sulphur.

Curculio and Oriental fruit moth remain light in peach orchards.

Bedford-Lexington-Southwestern Ohio Area: Codling moths have been tapering off at Lexington. According to Parks (Columbus), heavy catches of moths have occurred at Cincinnati since May 21, with first entrances observed May 28. High catches of moths were taken at Bedford, Indiana, May 29. A very heavy hatch of worms will be hatching in the area between June 10 and 16.

Grapes are ready for the third Bordeaux—lead arsenate spray for the control of black rot and grape berry moth.

Quincy-Pittsfield Area: Codling moth emergence has been heavy, although not yet at the peak. Full protection should be maintained on apples for at least two weeks. Apple scab is still active. Fermate or weak Bordeaux used with lead arsenate sprays will aid in controlling late apple scab. A fair amount of nicotine is available in the vicinity of Quincy.

Grapes at Nauvoo are ready for the 4-6-100 Bordeaux and lead arsenate spray for the control of black rot and grape berry moth.

Peoria-Champaign-Lafayette Area: A heavy hatch of worms is expected to continue for at least two weeks. Growers should maintain adequate protection on their fruit. The use of Fermate or weak Bordeaux will help to control late scab. The addition of oil may be advisable in orchards where the use of oil will not cause injury from recent applications of sulphur.

Northern Illinois-Indiana Area: Codling moths are starting to emerge and worms should be hatching by mid-June, although a heavy hatch is not to be expected before June 25. Control of late apple scab may be important in some orchards. Fruit prospects are light over much of the area.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar of the Illinois Natural History Survey.

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THE JOURNAL OF THE
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VOLUME LXXV. PART 1. 1945.
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ROYAL ANTHROPOLOGICAL INSTITUTE
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11, BEDFORD SQUARE, LONDON, W.C.1.

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ROYAL ANTHROPOLOGICAL INSTITUTE
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VOLUME LXXV. PART 1. 1945.
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June 3-9, 1945

(Prepared by Illinois State Natural History
(Survey and Extension Service in Agriculture
(and Home Economics, University of Illinois
(College of Agriculture, Urbana, Illinois

NARRATOR: Here's your spray service report, presented through the cooperative efforts of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky and the U. S. Department of Agriculture.

SPRAY SERVICE REPORT AREAS

- 1 - Paducah-Villa Ridge
- 2 - Carbondale-Vincennes-Henderson-
Louisville, Ky.
- 3 - Belleville-Hardin-Centralia

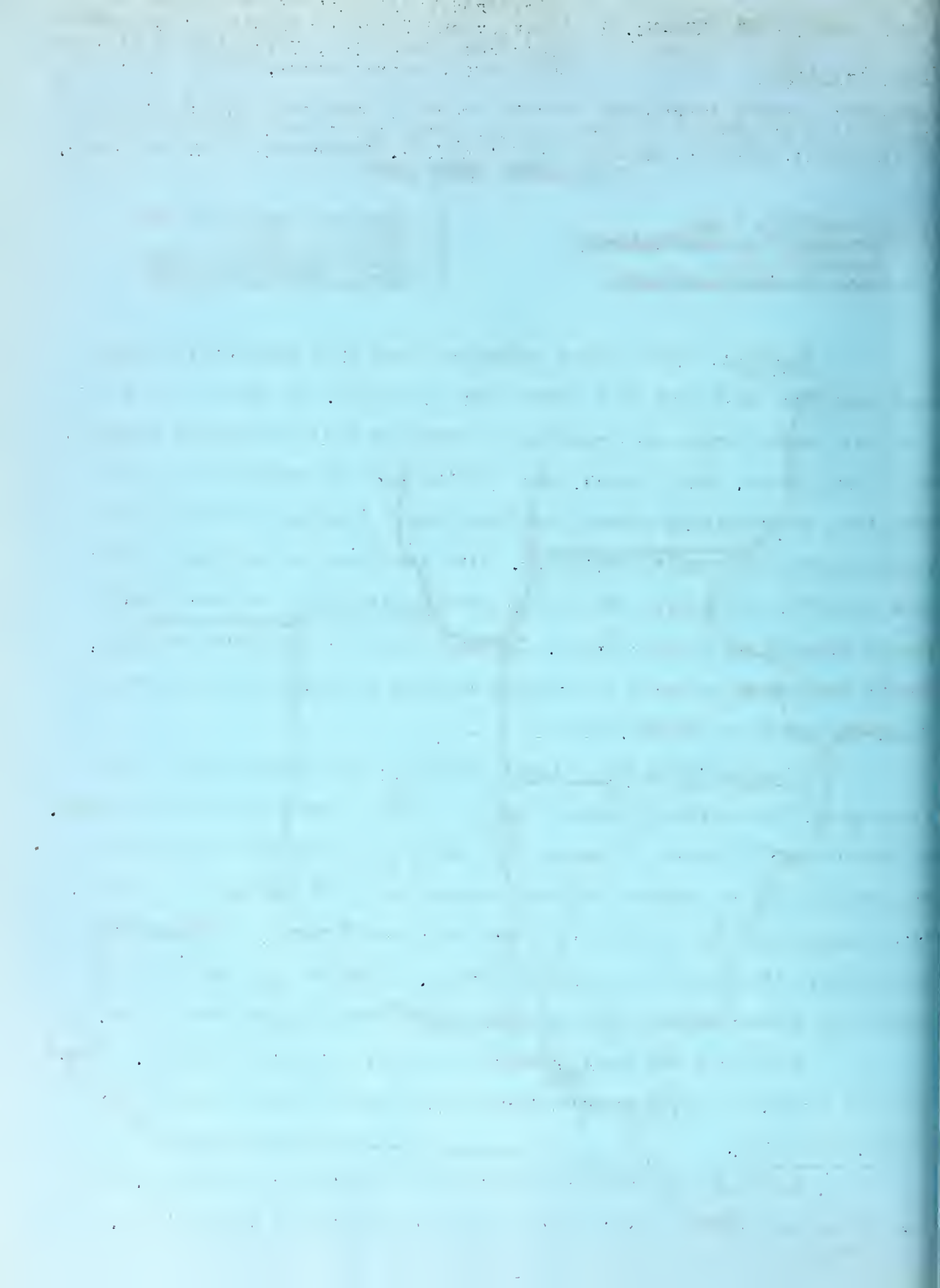
- 4 - Bedford-Lexington-S.W. Ohio
- 5 - Quincy-Pittsfield
- 6 - Peoria-Champaign-Lafayette
- 7 - Northern Illinois-Indiana

General: Apple fruit prospects have been materially lightened over the past week by a heavy drop of fruit. As low as 10 to 60 per cent normal crops are reported in orchards that originally indicated a full crop. Apple scab, poor pollination and frequent freezes have been contributing causes for this drop. Peaches are generally overset and will require thinning. With curculio and Oriental fruit moth reported light over the entire area, most of the injured fruits may be removed as excess fruit. Codling moths are emerging rapidly, making necessary adequate protection against first-brood worms for at least two or three weeks.

Paducah-Villa Ridge Area: Codling moths have passed peak emergence, with worm entrances common in poorly sprayed apple orchards. An ovicide of 2 quarts of summer oil per 100 gallons may be helpful in sprays applied on problem orchards during the next two weeks. Varieties susceptible to blotch and bitter rot⁴ should receive 4-6-100 Bordeaux until the disease is under control. Thorough coverage of the fruit for insect control must be maintained for at least two weeks.

Brown rot has been reported on early ripening peaches. Pre-harvest sprays or dusts containing sulphur should not be omitted on these varieties.

Curculio and Oriental fruit moth continue to be light, with second brood Oriental fruit moth reported starting at Villa Ridge.



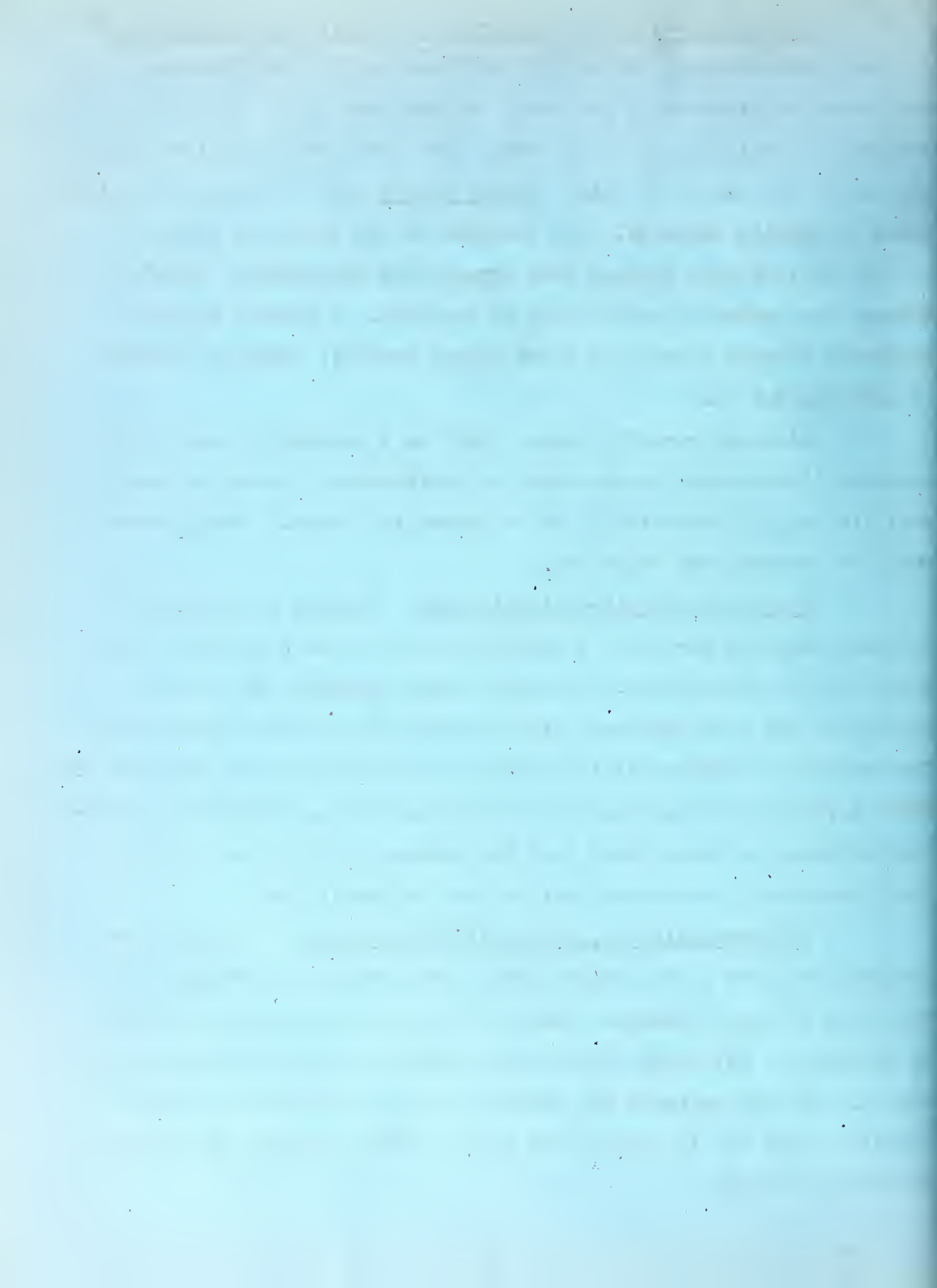
Carbondale-Vincennes-Henderson, Louisville, Kentucky Area:

Codling moth emergence has been heavy since May 20. At Vincennes emergence is estimated 70 per cent, at Carbondale 30 to 30 per cent complete. Egg-laying has been heavy, the worms hatching within nine days after the eggs were laid. Weekly sprays will be needed to control worms in problem orchards. The addition of two quarts of summer oil per 100 gallons will destroy many eggs before they hatch. Worm entrances are common in poorly sprayed orchards. A 4-6-100 Bordeaux should be applied where needed for blotch control. (Blotch observed in orchards May 23.)

Although curculio remain light on a relatively heavy crop, Chandler (Carbondale) states that "an application of spray or dust at this time will be of value if the weather stays warm." Early peaches should be watched for brown rot.

Belleville-Hardin-Centralia Area: Codling moth emergence has been about 25 per cent at Belleville, 10 per cent at Hardin and 3 per cent at Jerseyville. Continued heavy emergence is expected. Egg-laying and worm entrances will be heavy for the next three weeks. The addition of summer oil is needed as an ovicide for the next two or three sprays; weekly applications of sprays will be advisable in problem orchards. A heavy fruit drop has reduced the apple crop, making the protection of remaining fruit a more difficult job.

Bedford-Lexington, Southwestern Ohio Area: Codling moths probably are past peak emergence May 25 at Lexington, Kentucky, and May 29 at Bedford, Indiana. About 70 per cent of moths have emerged at Vincennes. Extremely heavy hatch should be expected between June 4 and 10. In some orchards the continued use of a fungicide is more important than an oil ovicide for codling moth, according to Marshall (Bedford, Indiana).



Peach tree foliage and fruit are growing rapidly. Brown rot was reported at Lexington on Valiant peach May 27, indicating a need for sulphur sprays or dusts on early peaches. There has been considerable leaf drop on peaches where two arsenate of lead sprays were applied, according to Ritcher (Lexington).

Quincy-Pittsfield Area; Peoria-Champaign-Lafayette, Indiana, Area: Codling moth emergence is 10 to 20 per cent complete, with heavy emergence expected at once. Traps and cage catches at Pittsfield and Urbana indicate that a heavy hatch of worms may be expected by June 6-10. Blotch-susceptible varieties should receive 4-6-100 Bordeaux. The use of summer oil as an ovicide is advisable if two weeks have passed since the last application containing sulphur. Weekly sprays for the next three weeks may be advisable in orchards where codling moths have been severe. A heavy drop of fruit from apple scab, poor pollination and cold weather has materially reduced the crop prospect. Russet is reported severe on most varieties in the Quincy-Pittsfield area.

Northern Illinois-Indiana Area: First codling moths were reported at Rock Island, Illinois, the last week of May. First hatch should occur about June 8-10. Varieties of apples not susceptible to blotch should be sprayed with sulphur for control of apple scab. On blotch-susceptible varieties use 4-6-100 Bordeaux.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar and Dwight Powell of the Illinois Natural History Survey and the Department of Horticulture, respectively.

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Cooperative Extension Work in Agriculture and Home Economics:
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for ensuring the integrity of the financial data and for facilitating the audit process. The document also highlights the need for transparency and accountability in all financial dealings.

In the second part, the document outlines the specific procedures for recording transactions. It provides a detailed description of the accounting system used, including the methods for recording debits and credits. The document also discusses the importance of reconciling the accounts regularly to ensure that the records are accurate and up-to-date. Furthermore, it mentions the need for proper documentation and the retention of records for a specified period.

The third part of the document focuses on the internal controls and the role of the management in ensuring the accuracy of the financial statements. It discusses the various checks and balances that are in place to prevent errors and fraud. The document also mentions the importance of the management's oversight and the need for regular reviews of the financial performance. Additionally, it highlights the role of the internal audit function in providing independent assurance on the financial reporting process.

The final part of the document provides a summary of the key points discussed and reiterates the commitment to transparency and accuracy. It concludes by stating that the organization is dedicated to providing reliable financial information to all stakeholders and to maintaining the highest standards of financial reporting. The document also mentions the availability of the financial statements for review and the contact information for further inquiries.

June 18-24

(Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
(and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois)

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General: Cool weather has again delayed the normal activity of codling moths. In Kentucky the first larvae are leaving the fruit. In southern Indiana and Illinois the situation ranges between almost complete and complete spring brood moth emergence. In central Indiana and Illinois moth activity is at a peak or will be by June 18. Apple scab is still serious throughout the tri-state area. Bitter rot has not yet appeared, but weather conditions have been ideal for its development.

Paducah-Villa Ridge Area: W. D. Armstrong reports the harvest of Red Bird and Mayflower peaches still under way. Some Transparent apples are being picked. A few codling moth larvae are leaving the fruit in the Paducah-Princeton regions. Moth emergence is about over from Louisville south. Few late moths were emerging at Lexington and Covington on June 11. Continued protection against worm entrance is advised. No bitter rot is reported.

Curculio are very scarce, with some slight increase in numbers last week. In general, spraying is not needed except in some problem orchards. Peach scab is just appearing at Princeton on green June Elberta, Cumberland and Mikaddo.

Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area:
at Vincennes L. F. Steiner reports spring brood emergence nearly completed, with heavy egg deposition and worms hatching in fair numbers.

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Spray Service Report--No. 13, page 2.

The hatch will continue at a moderate rate this week. The interval between sprays should not exceed 10 to 12 days. Scab is still serious in many orchards. Sulfur should be substituted for oil in nicotine-bentonite sprays under severe scab conditions. Oil should be reduced or omitted in the following spray where this procedure is practiced.

Rosy apple aphid and the apple aphid are increasing in abundance. Red mite is still scarce.

In the Louisville area P. O. Ritcher reports that most of the emergence is over, but additional sprays may be needed to control late first-brood worms. Apple scab is still plentiful, with twig blight developing on susceptible varieties.

At Carbondale S. C. Chandler reports codling moth about 90 per cent emerged. The egg hatch has increased of late, with no decrease in sight for this week.

At Louisville P. O. Ritcher reports many full-grown curculio larvae leaving the peach. At Carbondale S. C. Chandler reports that jarring shows curculio light. Probably no spraying or dusting is necessary. Considerable arsenical injury is showing, thus emphasizing the fact that additional lead arsenate sprays should not be applied if not absolutely necessary. Sulfur is needed on early-maturing varieties, such as Red Bird, for brown rot control.

Bellefonte-Hardin-Centralia Area: At Bellefonte about 70 per cent of the moths have emerged. Well-sprayed fruit is giving excellent control.

At Grafton 50 per cent of the moths have emerged. Untreated fruit shows 16 to 28 per cent infestation. Additional spraying should be continued at seven-day intervals. Bitter rot sprays should be started in problem orchards or blocks.

Bedford-Lexington-Southwestern Ohio Area: G. Edward Marshall reports bait trap catches of codling moths moderately high. Peak egg

hatch should be at hand this week. The average grower should not slight either scab or codling moth at this time. A heavy drop of apples is occurring. In some orchards a number of apples contain codling moth larvae. Apple aphids are building up to a serious population.

Quincy-Pittsfield Area: Peak codling moth hatch should occur this week. Spraying should be continued at seven-day intervals; $\frac{1}{2}$ -1-100 Bordeaux should be used as the arsenical safener in order also to reduce scab infection.

Peoria-Champaign-Lafayette Area: The peak emergence of moths should occur this week. Codling moth sprays should be continued at seven-day intervals.

Northern Illinois-Indiana: Codling moth hatch has started. Scab is severe. Mild sulfurs should be continued at full strength at seven-day intervals.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by Dwight Powell, Department of Horticulture, Illinois Agricultural Experiment Station.

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EHR:pm
6/15/45



June 24-30

(Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
(and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois)

NARRATOR: Here's your spray service report, presented through the cooperative efforts of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky and the U. S. Department of Agriculture.

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General: Cool wet weather has been favorable for apple scab.

This disease is still serious throughout the tri-state area. Bitter rot has not appeared, but growers should watch for it. Quince rust is general in southern Indiana orchards. First-brood codling moth are almost over in Kentucky and extreme southern Indiana and Illinois. Moths are still numerous in central Indiana and Illinois. In northern Indiana and Illinois codling moths are almost at peak emergence. Aphids are abundant in many orchards, but parasites and predators are expected to hold them in check.

Paducah-Villa Ridge Area: W. D. Armstrong (Kentucky) reports the harvest of Transparent apples and Redbird peaches well under way. Codling moths are between first and second brood. Injury from first-brood worms was lighter than expected.

Curculio remain light in peach orchards. Second-brood Oriental fruit moths are causing noticeable twig injury on succulent growth. Brown rot is severe on Redbird peaches.

Carbondale-Vincennes-Henderson-Louisville, Kentucky Area: At Vincennes L. F. Steiner reports that first-brood emergence of codling moths has ceased, but moths are still coming to traps in fair numbers and first-brood eggs will continue hatching for another two weeks. At Carbondale, S. C. Chandler reports that first brood is about over and recommends that growers who have followed a heavy spray schedule extend their schedules to a two-week interval between sprays until second-brood worms start hatching. No bitter rot was reported in the area.

On peach, curculio and Oriental fruit moths still remain light.

Belleville-Hardin-Centralia Area: Peak emergence of codling moths is over, although moths will be flying and eggs hatching for another two weeks. S. C. Chandler recommends that, in orchards using a full spray schedule, after this week a two-week interval between sprays be followed until the second-brood hatch. First-brood worms are leaving apples in this area. Treated bands should be on the trees now.

Oriental fruit moths remain light, including the peach section in southern Calhoun county.

Bedford-Lexington-Southwestern Ohio Area: G. E. Marshall (Bedford, Ind.) reports that codling moths are at peak flight, with entrances of worms expected to continue for at least 10 days. Hail injury on May 9 contributed to upward of 25 per cent infection of apples by quince rust. Aphids are abundant, with parasites and predators active in reducing their numbers.

W. D. Armstrong reports codling moth emergence about over at Lexington on June 15. Curculio were leaving dropped fruit in large numbers June 12-18.

Quincy-Pittsfield Area; Peoria-Champaign Lafayette Area: Codling moths apparently reached a peak of emergence on June 15, but large numbers of moths are still emerging from cages. Weekly spraying may be advisable in problem orchards for another two weeks; $\frac{1}{2}$ -1-100 Bordeaux should be used as the arsenical safener in order also to reduce scab infection.

Northern Illinois-Indiana Area: Codling moths will probably reach peak emergence this week. Apple scab is severe to mild; sulphurs should be continued at full strength at seven-day intervals.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar, Illinois State Natural History Survey.

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EHR:pm
6/22/45

NARRATOR: Here's your spray service report, presented through the cooperative efforts of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky and the U. S. Department of Agriculture.

SPRAY SERVICE REPORT AREAS

- | | |
|--|---------------------------------|
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Louisville, Ky. | 5 - Quincy-Pittsfield |
| 3 - Belleville-Hardin-Centralia | 6 - Peoria-Champaign-Lafayette |
| | 7 - Northern Illinois-Indiana |

General: The past two weeks have been the most favorable for codling moth development of any period since emergence began. As a result, there has been a sharp increase in numbers of successful worm entrances. This will result in a later second-brood peak attack in well-sprayed orchards than in those poorly sprayed. First-brood eggs are expected to continue hatching in diminishing numbers for at least another week or two.

Paducah-Villa Ridge Area: According to W. D. Armstrong (Ky.), codling moths are still between broods. The first ~~second-brood~~ moth emerged at Paducah June 25, with 25 per cent of the worms pupated at Princeton June 27. Hatch will be starting in western Kentucky by July 1.

On peaches second-brood curculio have not started to emerge. Cultivation in peach orchards will destroy many curculio pupae in the soil. Brown rot continues severe in early-ripening peaches. San Jose scale is increasing on peach, and a spray of summer oil may be necessary to check scale development. Oriental fruit moths are increasing in this area.

Carbondale-Vincennes-Henderson-Louisville, Ky. Area: According to L. F. Steiner, Vincennes, larvae are leaving apples in steadily increasing numbers, but few adults will be flying before July 4, with no substantial increase in the rate of hatch expected before July 10. Growers with worm populations which average less than five entrances per 1,000 apples may be able to complete the season with only two more sprays. Ten or more worms per 1,000 apples at this time normally require four or more thorough second- and third-brood sprays.



Diagram illustrating the relationship between the two systems.



The diagram illustrates the relationship between the two systems. It shows a complex network of interconnected nodes and lines, representing the flow of information or the structure of the system. The diagram is divided into several sections by vertical lines, with various components and labels within each section. The overall structure suggests a hierarchical or modular organization, with the top section likely representing the main system and the lower sections representing sub-components or related systems. The connections between the nodes indicate the interactions and dependencies within the system.

At Carbondale first-brood moths are still emerging 69 days after they started. Both curculio and Oriental fruit moth remain light in peach orchards. Cultivation in problem orchards will destroy many curculio pupae in the soil.

Belleville-Grafton-Centralia Area: Codling moth emergence has tapered off, although a sharp increase in hatch of worms was noted by Chandler during the past week. The number of successful entrances has also increased sharply. A two-week interval between sprays is probably adequate until the second-brood hatch. First pupation was observed at Hardin June 25.

Bedford-Lexington-Southwestern Ohio Area: According to G. Edw. Marshall, Bedford, there has been a very heavy hatch of codling moths during the past week. The rate of hatch may subside a little this week. A late flight of moths is expected that will continue laying eggs for some time. Aphids are decreasing. Grasshoppers are appearing in young orchards, poisoning may be necessary to prevent damage to young where/trees. A nicotine spray for the control of leafhoppers may be necessary in orchards where leafhoppers are severe. Both apple scab and quince rust have caused a heavy drop in injured fruits.

New foliage on peach is replacing foliage severely injured by arsenical sprays.

Grape berry moths were hatching during the last week in June. Pittsfield-Quincy Area; Peoria-Champaign-Lafayette Area: Codling moths are still emerging from cages in large numbers. New entrances have increased sharply. Complete protection of fruit will be necessary for at least two more weeks. Apple scab is still active and causing damage in many orchards. Sulphur should not be used for control where oil has been included in the spray mixture.

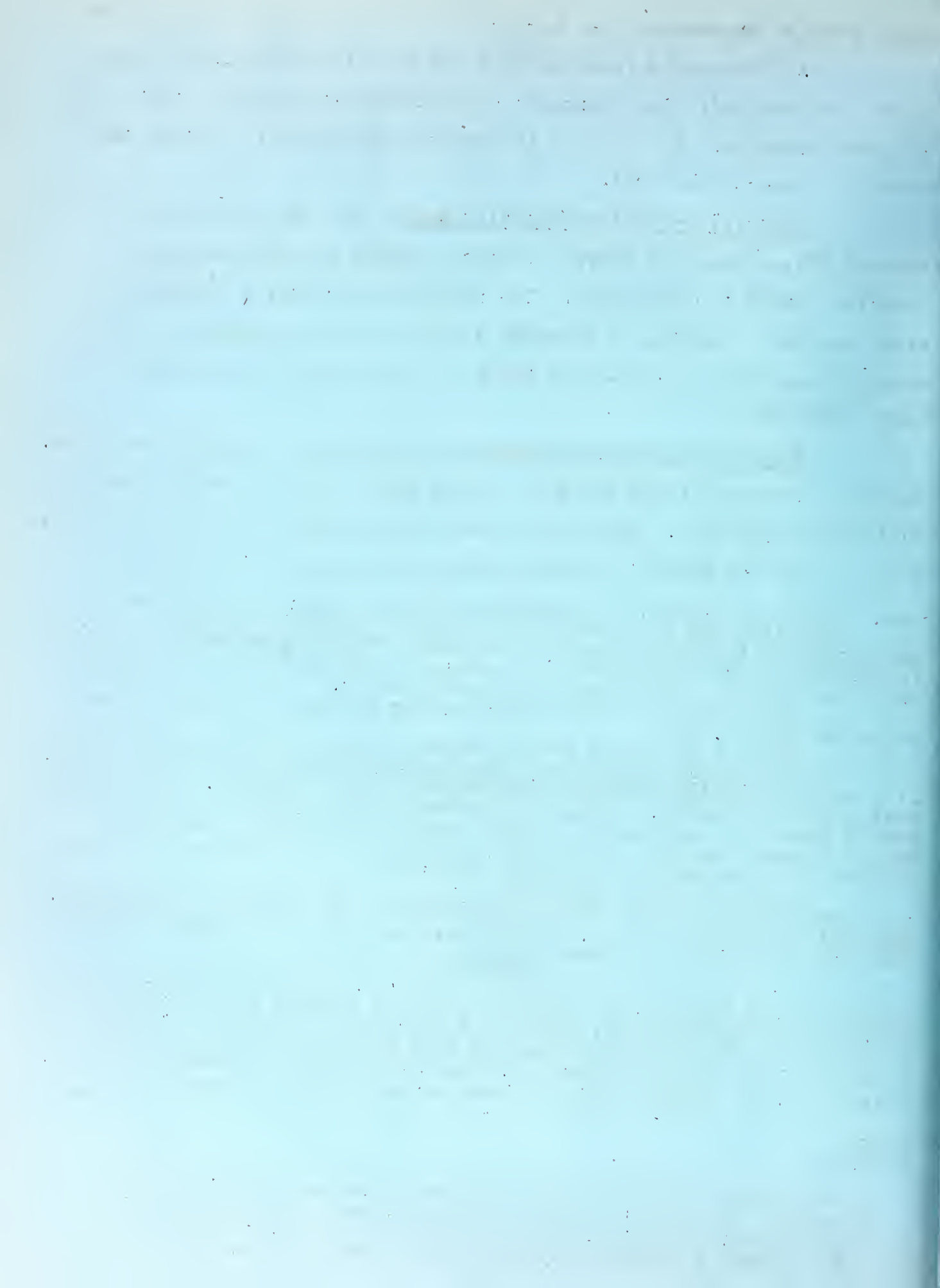
Northern Illinois-Indiana Area: Large numbers of codling moths are emerging from cages. Complete protection of apples is needed over the next two weeks. The addition of sulphur for the control of apple scab may be advisable in many orchards.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar, Illinois State Natural History Survey.

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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914



July 8-14

(Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
(and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois)

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General: Over much of the area emergence of codling moths in apple orchards dropped off during the past week indicating a slight break between broods. Moths are still emerging in small numbers from packing sheds, deep crevices and observation cages. An interval between sprays of greater than two weeks should not be practiced without full knowledge of the worm situation in the orchard. Full second-brood activity will not start until after mid-July.

Paducah-Villa Ridge Area: According to W. D. Armstrong, Kentucky, the second-brood codling moths have been emerging in small numbers since June 25. Kentucky apple growers from Louisville south are encouraged to complete their first second-brood spray at once and to make several additional applications at 10-day to two-week intervals. No bitter rot reported.

Cureulio remain light with a noticeable increase in injury by the Oriental fruit moth. Growers should not neglect the preharvest sulphur treatments for the control of brown rot on peaches.

Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area: L. F. Steiner, Vincennes, states that bait trap catches of codling moths are still at a low level, but adults of the second brood have begun emerging and some second-brood hatch has undoubtedly occurred. Because of the comparatively large number of successful entrances late in June, the peak of second-brood hatch may not appear before late July or early August in most orchards. It is too early to reduce spray concentrations or lengthen spray intervals beyond two weeks unless the grower has

THE UNITED STATES

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51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



determined that his first-brood population is not greater than five to 10 worms per 1,000 apples. Red mites are increasing in Starking, Rome, Golden Delicious and Grimes varieties.

S. C. Chandler, Carbondale, reports that a few early second-brood worms will be hatching by July 10, but in many orchards there will be no great need for spraying them.

Belleville-Hardin-Centralia Area: S. C. Chandler reports that there is little danger of infestation by first brood from now on. Most of the first-brood worms are late and have not left the apples. On July 2, 83 per cent were found to be less than two weeks old. At the earliest, the first second-brood spray could be applied about July 15.

Bedford-Lexington-Southwestern Ohio Area: At Lexington, P. O. Ritcher reports the first emergence of second-brood moths expected about July 10. G. E. Marshall, Bedford, states the rate of hatch and new entries from codling moth slowed down the past week. At the present time, however, there is a heavy emergence from packing sheds. These moths will be laying eggs for the next two weeks. A heavy second-brood hatch should be in progress the last few days of July and early in August.

Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area: Codling moth emergence dropped off during the past week. Eggs and new entrances can be found in many orchards. Adequate coverage must be maintained on the fruit. Growers should determine from observation in their orchards the need for additional first-brood sprays. Worms in fruit are small, indicating a late second-brood hatch of worms, probably not before late in July. Apple scab is causing severe injury to new foliage on the tips of branches.

Northern Illinois-Indiana Area: Some moths are still emerging from cages. Complete protection of apples should be maintained. The continued development of apple scab may justify the use of sulphur in all sprays applied for codling moth control.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar, Illinois State Natural History Survey.

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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. E. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914



July 15-21

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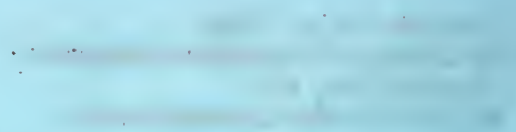
General: This week is definitely between broods of codling moth in all areas except Paducah-Villa Ridge (Area 1). In other areas second-brood worms will not be hatching in numbers until after July 21. Most orchards should be sprayed between July 22 and 28, followed by another spray 10 to 14 days later.

Illinois peach harvest will start about August 1 at Villa Ridge and August 6 near Carbondale. Growers should not neglect preharvest dusts containing sulphur for control of brown rot in ripening peaches.

Paducah-Villa Ridge Area: Early second-brood moths started to emerge June 25. Examinations July 11 by S⁷ C. Chandler at Villa Ridge indicated that new entrances were scarce. Apples in this area should be protected after July 15. At least two additional sprays may be necessary in some orchards, spaced at intervals of 10 to 14 days. A heavy hatch may be expected late in July.

Peaches will be ripening by August 1. Both curculio and Oriental fruit moth are light. In most orchards only the five outer rows of trees should receive a preharvest dust containing an arsenical for curculio control. The interior of the blocks should receive a sulphur treatment for brown rot, without an arsenical. Injury from poison treatments has been severe in many orchards. Bacterial spot has also caused some defoliation.

Carbondale-Vincennes-Henderson-Louisville, Kentucky Area: A few early second-brood moths have emerged both at Vincennes and Carbondale.



[The following text is extremely faint and illegible due to the quality of the scan. It appears to be a series of paragraphs or a list, but no specific words or structures can be identified.]

L. F. Steiner, Vincennes, July 11, reports no noticeable increase in moth activity or rate of hatch since June. Present low rate of hatch is expected to continue for another 10 days. These observations are confirmed by S. C. Chandler, Carbondale.

Both curculio and Oriental fruit moth are generally light. Growers should not neglect preharvest treatments for control of brown rot on peaches expected to start ripening about August 6. Control of curculio should be confined to the edges of the orchard in order to avoid increased defoliation over the rest of the orchard by treatments containing arsenic. Bacterial spot is also causing defoliation in many orchards.

Belleville-Hardin-Centralia Area: Dave Dell, Grafton, reported that the earliest second-brood moths emerged July 12. The second-brood spray should be applied after July 2, to be effective on the heavy hatch of worms expected late in July and early in August.

Curculio and Oriental fruit moth are light, with a need for treatments containing arsenicals questionable in most orchards. High-quality peaches are in prospect, with brown rot the most serious threat to the ripening fruit.

Bedford-Lexington-Southwestern Ohio Area: According to P. O. Ritcher, Lexington, first second-brood moths emerged July 10, with July 15 recommended as the date for starting the first second-brood spray. For southwestern Ohio, T. H. Parks, Columbus, reports that second-brood hatching should start there after July 23, with the first second-brood spray needed at that time. G. Edward Marshall, Bedford, states that codling moth activity has dropped sharply, but that all apples should be well protected by July 23 against second-brood worms. At least one additional spray will be needed early in August.

Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area: Very few new entrances were observed in fruit over the past week. A few moths

are still appearing in cages, indicating a prolonged emergence from overwintering worms. Growers should examine their apples critically and apply additional sprays where they are needed to protect the fruit. Heavy second-brood hatch will not start before July 22.

Northern Illinois-Indiana Area: Moth emergence from cages has about stopped; however, complete protection of apples should be maintained. The continued development of apple scab may justify the use of sulphur in all sprays applied for codling moth control.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar, Illinois State Natural History Survey.

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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT--No. 18
July 22-28

(Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
(and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois

NARRATOR: Here's your spray service report, presented through the cooperative efforts of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky and the U. S. Department of Agriculture.

SPRAY SERVICE REPORT AREAS

- 1 - Paducah-Villa Ridge
- 2 - Carbondale-Vincennes-Henderson-Louisville, Ky.
- 3 - Belleville-Hardin-Centralia

- 4 - Bedford-Lexington-S.W. Ohio
- 5 - Quincy-Pittsfield
- 6 - Peoria-Champaign-Lafayette
- 7 - Northern Illinois-Indiana

General: Starting about July 22, second-brood codling moth larvae will gradually increase in numbers. It is expected that the peak hatch will not occur until sometime between August 4 and 10. The time to start second-brood sprays and the number of sprays needed will depend on individual orchard conditions. In problem orchards full protection should be maintained from the last week in July through the first two weeks of August. In these orchards the first spray should be applied during the week of July 22-28.

Paducah-Villa Ridge⁷ Area: Bait trap catches of codling moths increased July 18 and will probably continue⁷ to build up for some time. The peak will probably occur the last week in July. The hatch may be long drawn out and especially heavy during late July and early August.

⁶Curculio are increasing in numbers. P. O. Ritcher, Lexington, Ky., states that for eastern Kentucky the one-month-before-harvest curculio spray is not recommended³, although in some orchards the outside rows might need treatment. Golden Jubilee⁴ peaches were ripening at Lexington July 17; a few showed Oriental fruit moth⁴ entrances. Brown rot treatments of sulphur² should not be omitted on ripening peaches.

Carbondale-Vincennes-Henderson-Louisville, Ky., Area: L. F. Steiner, Vincennes, stated on July 18, that about four times as many¹ moths are coming to traps now as were being caught between broods. Moth activity should increase sharply late this week. The peak of second-brood hatch is expected to occur between August 4 and 10. S. C. Chandler,

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Carbondale, on July 18 said that fresh entrances had increased only slightly in poorly sprayed orchards.

Curculio are still lighter than in 1944 but are showing a slight increase, particularly near the edges of the orchard. Bait trap catches of Oriental fruit moth at Cobden, Ill., indicate that another brood may be entering peaches the last of July. Brown rot treatment of ripening peaches should not be omitted.

Belleville-Hardin-Centralia Area: According to observations by S. C. Chandler, "about 25 per cent of the earliest first-brood larvae had pupated on July 18." This situation indicates that sprays will be needed to protect the fruit by July 28. The emergence of a few moths already indicates some hatch previous to July 28. Peak hatch will probably not occur, however, until the second week of August.

Bedford-Lexington-Southwestern Ohio Area: G. E. Marshall, Bedford, on July 17 reported large numbers of larvae leaving the apples to pupate. This means that they will be laying eggs heavily around July 26. Leafhoppers are damaging apples and grapes. Sprays containing nicotine are needed for control of leafhoppers in some orchards. P. O. Ritcher expects a fairly heavy hatch of worms at Lexington by July 25, with a long-drawn-out second brood, especially heavy late in July and early August.

Curculio have not increased enough to justify control measures except around the edges of orchards. However, brown rot control on ripening fruit should not be neglected.

Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area: On July 16 at Champaign a few new entrances were observed that are probably stragglers from first-brood moths. Earliest larvae now leaving the apples indicate the start of hatch of second-brood worms during the week of July 22-28. Peak hatch will not occur until sometime in August. Growers should observe their fruit carefully for signs of new worms entering apples.

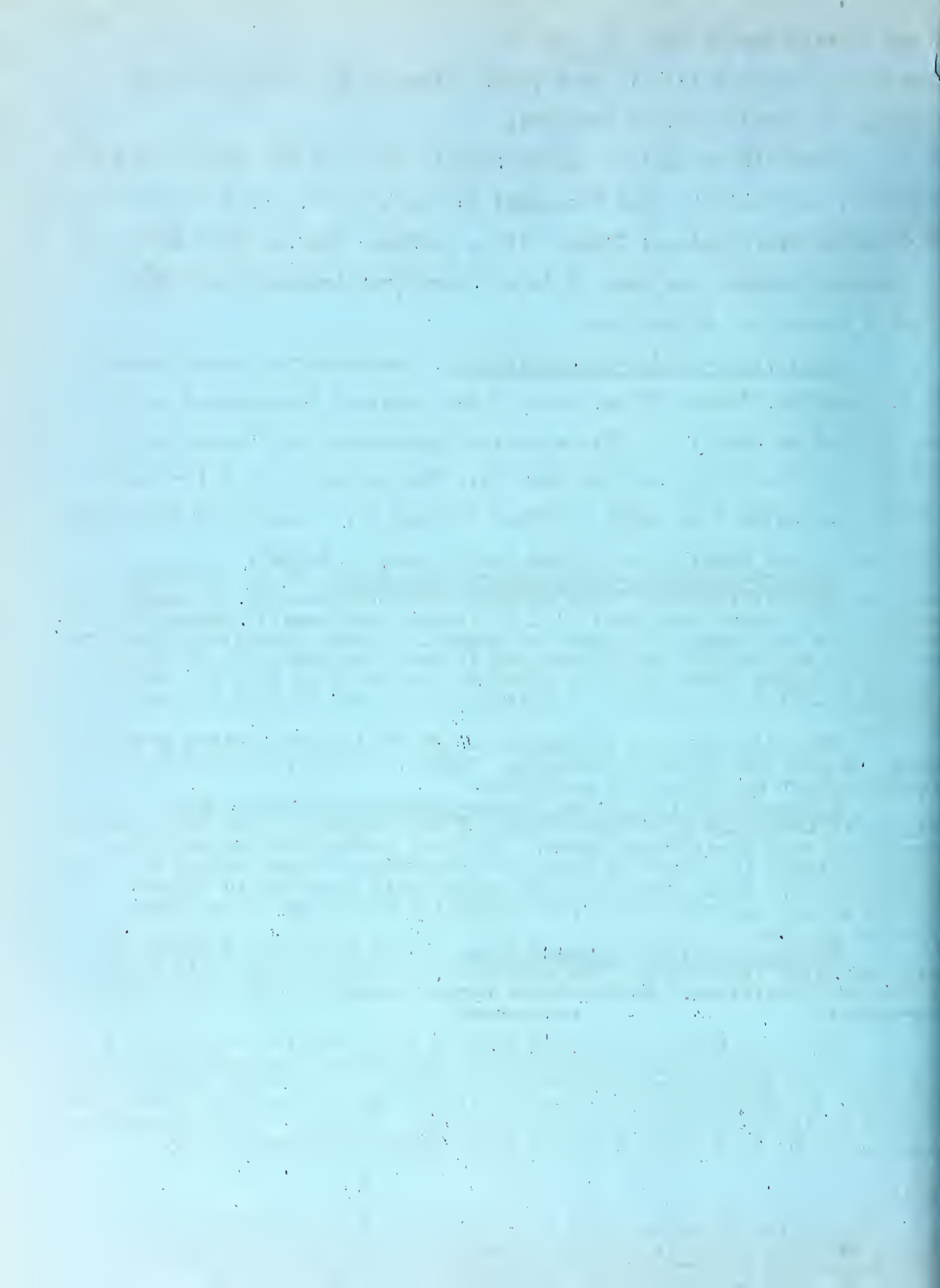
Northern Illinois-Indiana Area: A few first-brood moths are still emerging from cages. The need for additional sprays will depend on orchard conditions. Second-brood sprays should not be needed before mid-August.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Denuded Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar, Illinois State Natural History Survey.

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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914



July 28-August 4

(Prepared by Illinois State Natural History
(Survey and Extension Service in Agriculture
(and Home Economics, University of Illinois
(College of Agriculture, Urbana, Illinois

NARRATOR: Here's your spray service report, presented through the cooperative efforts of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky and the U. S. Department of Agriculture.

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7 - Northern Illinois-Indiana

General: Weather throughout the past week was very favorable for the development of codling moth. Second-brood worms are hatching in increasing numbers throughout Kentucky, Southern Indiana and Illinois. By August 1 a heavy hatch is expected over southern areas. Growers located in central or northern Indiana and Illinois should watch their crops closely for appearance of new entrances. The amount of spraying required to protect against second-brood moths will depend on conditions within individual orchards.

Peaches are ripening rapidly in southern areas. Treatments for control of brown rot are important just before harvest.

Paducah-Villa Ridge Area: W. D. Armstrong, Princeton, Kentucky, reported July 25 that adult codling moths continue to be caught in numbers in traps at Paducah, Princeton, Henderson and Louisville. Continued protection is justified from Louisville south, and early second-brood sprays should be on in northern Kentucky. Bitter rot appeared in the Owensboro section July 21.

Curculio treatments are warranted only around the edges of orchards. Preharvest control of brown rot should not be neglected.

Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area:

Although new codling moth entrances are still hard to find in some orchards, it is expected that activity will increase sharply by August 1. L. F. Steiner, Vincennes, reported July 25 that the peak of first-brood adult activity is now believed to be near or already occurring. Moth catches are the largest since May 21. Second-brood worms are hatching

1. General Information
 2. Objectives
 3. Methodology
 4. Results
 5. Conclusions

Date: _____
 Page: _____
 Author: _____



in steadily increasing numbers; a comparatively heavy hatch will be under way by August 1 and should continue for two or three weeks.

Peaches are maturing rapidly. Curculio are light, with further need for control uncertain. Oil dusts for brown rot are needed in most orchards.

Belleville-Hardin-Centralia Area: According to S. C. Chandler, Carbondale, larvae leaving the fruit have increased rapidly in the past two weeks; over 50 per cent of the worms taken between July 17 and 24 had pupated by July 24. Adequate coverage should be maintained on apples throughout the next three weeks.

Bedford-Lexington-Southwestern Ohio Area: G. E. Marshall, Bedford, reported July 24 that new entries of second-brood codling moths are increasing rapidly and that mature larvae are leaving the apples in large numbers. P. O. Ritcher, Lexington, reports very few fresh entrances, with the peak of moth activity not yet in sight.

Curculio are very low, and the Oriental fruit moth is attacking ripening peaches in noticeable numbers. Activity of this insect indicates the start of a third brood. Sulphur treatments for brown rot control are important at this time.

Quincy-Pittsfield Area: In Pike and Hancock counties very few entrances were found by S. C. Chandler July 25. None were observed in some orchards. Growers should watch for the appearance of new entrances and start second-brood sprays at once.

Leafhopper nymphs are attacking grapes in moderate numbers at Nauvoo. It is too late for applications of Bordeaux, but control of leafhoppers by nicotine sprays is still practical.

Peoria-Champaign-Lafayette Area: New entrances of second-brood worms were hard to find at Champaign July 26. Spraying can probably be delayed in most orchards until the week of July 28--August 4. A delay in spraying beyond this week will be justified only in orchards very low in codling moth.

Northern Illinois-Indiana Area: The time to start second-brood sprays should be determined by appearance of new entrances on the fruit. The earliest hatch is not expected before mid-August.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar, Illinois State Natural History Survey.

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General: Peach harvest - South Haven and Valiant varieties, Lexington, Kentucky, July 31; Hale Haven, Bedford, Indiana, August 1; Elberta variety, Paducah, Kentucky, August 1; Villa Ridge, Illinois, August 3; Henderson, Kentucky, August 6; Carbondale, Illinois, August 8 to 10, Centralia, August 15. Curculio, Oriental fruit moths, weather cracking and storm-injured fruit have contributed to severe outbreak of brown rot in some orchards. Recommended preharvest treatments for control of brown rot and Oriental fruit moth are needed in many orchards.

Second-brood codling moth larvae will be entering apples in numbers over the next two weeks. Apples should be well protected at 10- to 14-day intervals from now until the hatch is over sometime after August 15.

Grasshoppers are threatening to damage young orchards. Adequate control⁵ by applying⁶ poison bait is recommended.

Paducah-Villa Ridge Area; Carbondale-Vincennes Area: On peaches, apply oil dusts for control of Oriental fruit moth and brown rot up to the time the fruit is harvested. In addition to making field applications, growers equipped to apply sulphur on the fruit as it passes through the grading machine should not neglect to do⁴ so.

Codling moths are slacking off south of Louisville, Kentucky, but are still going strong at Covington, Kentucky, and Villa Ridge, Illinois. Full protection is needed on apples this week.

Carbondale-Vincennes-Henderson-Louisville, Kentucky, Area:

L. F. Steiner said August 1 that second-brood hatch will increase considerably during the next week. Indications now are that the second-brood worm attack will continue heavy in many orchards until at least

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the middle of August. If a cover spray has not been applied within the past 10 days, it should be done immediately. Another should follow after a 10-day to three-week interval, depending on the degree of control obtained. S. C. Chandler suggests that growers producing both apples and peaches should be sure to apply a spray for codling moth just preceding peach harvest.

Curculio have increased to about the level of the shuck fall spray. Control needed will depend on individual orchards. Apply oil for control of Oriental fruit moth and brown rot up to the time peaches are harvested.

Belleville-Hardin-Centralia Area: S. C. Chandler reported August 2 that new hatch of codling moth had not appeared in this area. Hatch is however expected to start by August 4. Amount of spraying needed for second brood will depend on individual orchard conditions.

Oriental fruit moths are heavy in ripening fruit (50 per cent at Olney, Illinois). Freshly wilted twigs are abundant. Orchards showing much infestation need protection by applications of oil dust. Such treatment will also materially reduce the danger from brown rot on ripe fruit.

Bedford-Lexington-Southwestern Ohio Area: Worms from second-brood codling moths are attacking apples in numbers. Hatch is expected to remain heavy for at least two weeks. Ripening peaches are showing considerable damage from Oriental fruit moth. Peak third-brood hatch of this insect will occur between August 4 and 9 at Bedford, Indiana. Pre-harvest treatments for control of Oriental fruit moth and brown rot are now very important. Brown rot is reported severe in some orchards near Lexington, Kentucky.

Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area: Second-brood moth emergence was just starting at Champaign August 1. About 10 per cent of larvae have pupated. A moderate hatch is expected to start about August 6 that will reach a peak between August 15 and 20, and relaxation of control efforts now could produce a disaster in September if weather remains favorable. A heavy hatch may develop during the harvest period.

Northern Illinois--Indiana Area: Codling moth in this area should be between broods. The first hatch of worms should not occur before August 20. Growers should observe their fruit frequently and apply spray if new entrances appear in apples.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar, Illinois State Natural History Survey.

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General: Elberta peach harvest was in full swing south of Carbondale, Illinois, August 8. Some fruit is being picked as far north as Centralia. Moderate numbers of recently hatched Oriental fruit moths can be found in ripening fruit over much of the major peach area. Dusting for control of Oriental fruit moth and brown rot has been quite general in the better orchards.

Apples are under attack by the second-brood codling moth in all areas except Area 7, Northern Illinois-Indiana.

Paducah-Villa Ridge Area: Peaches are being harvested rapidly, with the bulk of the crop already off. Oriental fruit moth is reported as high as 25 per cent in some blocks of fruit. Losses from brown rot have been light where proper control measures have been practiced.

Codling moths are still heavy, with fresh entrances reported more abundant than usual at Lexington, Princeton and northern Kentucky.

Carbondale-Vincennes-Henderson-Louisville Kentucky, Area;
Belleville-Hardin-Centralia Area; Bedford-Lexington-Southwestern Ohio
Area: Peach harvest will extend over these areas during the week. A late hatch of Oriental fruit moth is entering ripening fruit in considerable numbers. Preharvest treatments for control of this insect and brown rot should not be neglected. Brown rot is appearing in many packages of fruit reaching the markets. Applications of sulphur to fruit in the packing shed may be advisable in some orchards.

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Codling moth activity and abundance continue at a high level, with no decrease in the present rate of hatch in prospect for at least another week, according to a report from L. F. Steiner, Vincennes.

Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area: New entrances of codling moths were quite common on unsprayed fruit August 9 at Champaign. This week will show a heavy increase of new worms. This attack will probably reach a peak during the latter part of this week or early the following week. All fruit should be adequately protected for the next two weeks.

Northern Illinois--Indiana Area: Growers should observe their fruit frequently and apply a spray if new entrances appear in apples. A cover spray may be necessary around August 20.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar, Illinois State Natural History Survey.

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V-J day happily upset the usual routine of spray report preparation for this week. Thus, in order to get pertinent information to the growers in time, we are making this week's report short and snappy.

At Lexington, Ritcher reports rather heavy moth emergence the past week, with fresh worm entrances common.

At Vincennes, Steiner reports that cool weather has decreased the rate of second-brood hatch. Moth abundance, however, assures considerable hatch of additional second-brood larvae until third brood starts. Mature second-brood larvae are now leaving the apples. Adults of this brood should appear by August 29, with third-brood hatch well under way by September 10.

Chandler warns growers in Centralia area to apply sulfur on peaches for brown rot control even after first picking. Brown rot is very serious in all peach growing regions. Second-brood codling moth hatch is well under way in Illinois and another spray should be applied this week in the southern and central Illinois areas.

Bitter rot has appeared in Gallatin and Massac counties in Illinois. Growers are warned to be on the watch for this disease until the fruit is harvested. If it appears apply a 4-6-100 Bordeaux mixture to the infected block at 10-day intervals until harvest.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by Dwight Powell, Department of Horticulture, University of Illinois College of Agriculture.

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Carbondale-Vincennes-Henderson-Louisville Area: Codling moth hatch is continuing but diminished somewhat during the past week. An increase is expected by September 1. In most orchards the last spray has been or is being applied.

Bitter rot can develop and is likely to do so in problem orchards yet this season. If it appears, start a 4-6-100 Bordeaux immediately and continue at 10-day intervals until fruit is picked.

Peach harvest is about over in this area. Brown rot is reported serious.

7
Bedford-Lexington-Southwestern Ohio Area: Codling moth activity is reduced. Bitter rot is serious, and 4-6-100 Bordeaux should be applied under such conditions. Jonathan and Grimes harvest is planned for August 25.

6
Elberta harvest is one-half over. Brown rot is serious.
Belleville-Hardin-Centralia Area; Quincy-Pittsfield Area; and
points north: In general, spraying is about over for this season on varieties Jonathan and Grimes. Some orchards which have not controlled first and second broods may have trouble later. Many orchards are very clean, however, and further spraying will be unnecessary.
Brown rot is serious on peaches, and sulfur sprays or dusts at five-day intervals to harvest are recommended.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by Dwight Powell, Department of Horticulture, University of Illinois College of Agriculture.

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September 2-9, 1945

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Paducah-Villa Ridge Area; Carbondale-Vincennes-Henderson-

Louisville, Ky. Area: According to S. C. Chandler, some fresh codling moth entrances are in evidence in southern Illinois orchards. Jonathans are being harvested. Bitter rot is still likely to appear on susceptible varieties.

L. F. Steiner, Vincennes, reports that moth activity increased for a short period between August 20 and 22, but low temperatures and rains following August 22 caused a considerable drop in bait trap catches. Third-brood larvae are hatching in small numbers in most orchards. Eleven thousand apples examined during the past week in fields sprayed with nicotine bentonite averaged one fresh injury per 100 apples. The need for further spraying will depend upon the amount of spray deposit ⁵ now on the ⁶ fruit and the rate of hatch occurring in each individual orchard. At least 10 per cent of the larvae now in orchards will transform to moths. A return to hot dry weather could bring about a considerable ³ third-brood hatch before mid-September. First pickings of Grimes are now under way in most ⁴ orchards.

S. C. Chandler ² states that scales have been very bad in a number of southern Illinois ² peach orchards. If the infestation is very severe, a 2 per cent summer oil should be used, now that fruit is off, to hold scale in check until a dormant spray can be applied. ¹

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Quincy-Pittsfield Area; Peoria-Champaign-Lafayette Area;

Northern Illinois-Indiana Area: Appreciable numbers of fresh codling moth entrances are evident in central and northern Illinois, according to S. C. Chandler. Late apples should be protected. Bitter rot is still likely to appear in the central region on susceptible varieties.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar, Illinois State Natural History Survey.

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CONTENTS
The Journal of the Royal Anthropological Institute of Great Britain and Ireland
Volume 100, Part 1, 2000
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September 9-15, 1945

NARRATOR: Here's the concluding spray service report for 1945, presented through the cooperative efforts of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky and the U. S. Department of Agriculture.

SPRAY SERVICE REPORT AREAS

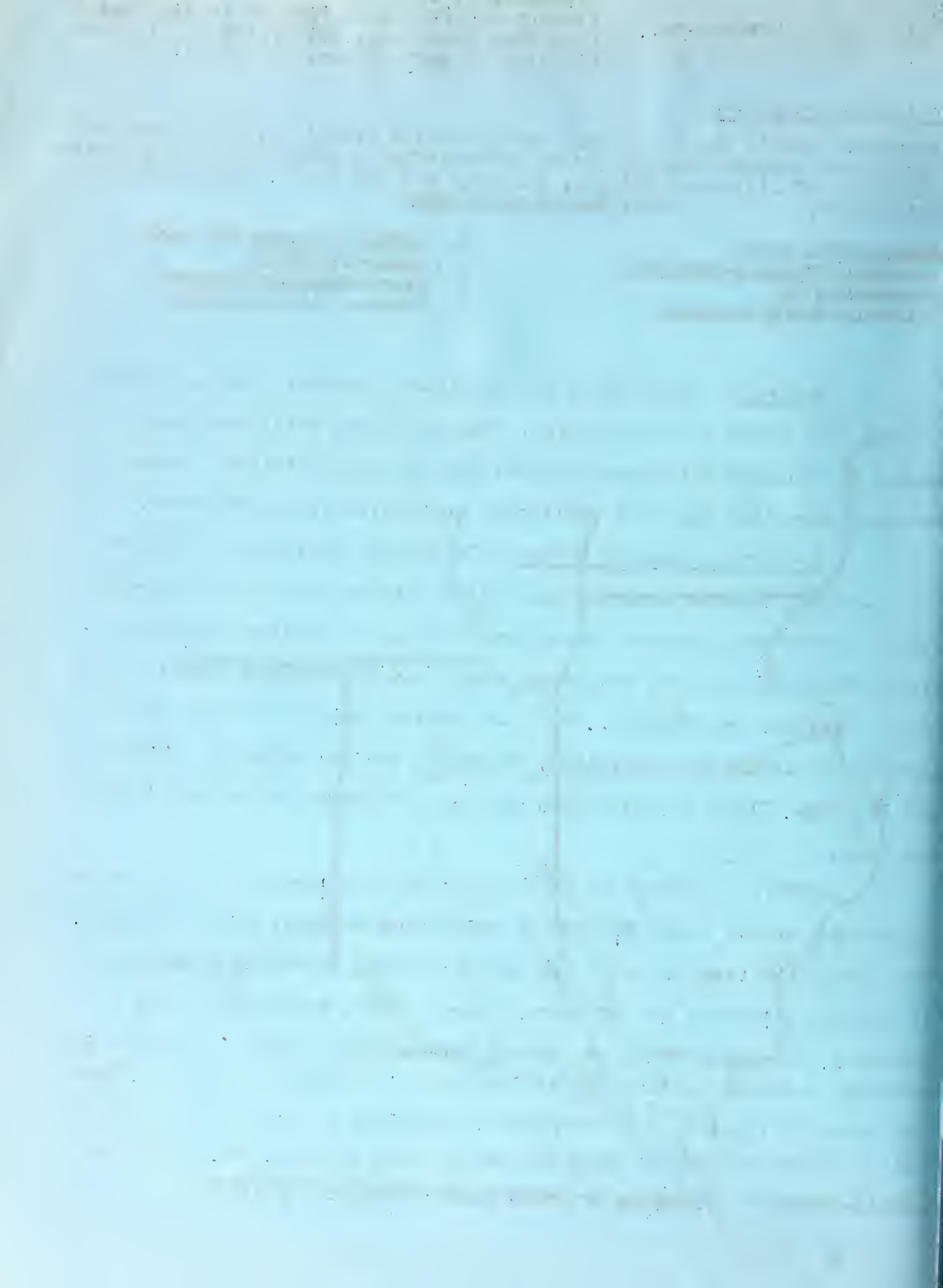
Puducan-Villa Ridge
Carbondale-Vincennes-Henderson-
Louisville, Ky.
Belleville-Hardin-Centralia

4 - Bedford-Lexington-S.W. Ohio
5 - Quincy-Pittsfield
6 - Peoria-Champaign-Lafayette
7 - Northern Illinois-Indiana

General: The weather has continued favorable for late-brood codling moth worms to enter apples. New worms are still entering apples in orchards where good control has not been obtained. Late-maturing varieties may need additional protection from late worms.

Preharvest Hormone Sprays: On certain varieties of apples the so-called hormone sprays, also called harvest sprays and anti-drop sprays, effectively prevent premature dropping of apples at picking time. Their use on such varieties should now be standard practice; on others they are ineffective. Fall and winter varieties which can be sprayed profitably are Delicious, Starking, Golden Delicious, Winesap and Stayman. Those on which they are not effective are Grimes, Willow and York.

—It is customary to delay applying this spray until the sound apples are almost ready to pick or until they actually start to drop. The spray will take at least two days to become appreciably effective; it remains effective for 10 days to three weeks, depending on the variety. One spray should be enough for varieties grown in this region, although a second application can be made in 10 days if desired. When the spray is applied, the temperature should be at least 70° F. It is not effective if applied when the temperature is low. The effect is local; therefore the stem of every apple should be drenched.



Delicious sprayed with this material should not be harvested so late as to become mealy prematurely; on the other hand, the use of the spray makes it possible to harvest Golden Delicious, Stayman, Winesap, Jonathan and even Delicious with a better color and at a better stage of maturity than heretofore.

There are a number of commercial brands sold under descriptive trade names. All that is necessary is to dissolve the spray in water in the tank of the sprayer in accordance with the manufacturer's directions. Enough to make 100 gallons of diluted spray costs about \$1.00. In this year of high apple prices a hormone spray should be especially profitable.

Final Report for 1945. This issue will complete the series of 25 spray service reports which have been issued every Thursday for the use of fruit growers. The following men have contributed to the success of the Spray Service Report by their reports on orchard conditions:

L. F. Steiner, Bureau of Entomology and Plant Quarantine, Vincennes, Indiana.

The staffs of the Illinois Natural History Survey and the University of Illinois Department of Horticulture, at Urbana, Illinois.

Prof. C. L. Burkholder, Prof. J. J. Davis, and Dr. G. Edw. Marshall, Indiana Agricultural Experiment Station, Purdue University, Lafayette, Indiana.

Dr. W. D. Armstrong, and Dr. P. O. Ritcher, Kentucky Agricultural Experiment Station, University of Kentucky, Princeton and Lexington, Kentucky.

Prof. T. O. Parks, Ohio State University, Columbus, Ohio

Jos. M. Ackles, Griggsville, Ill.

Charles S. Adkins, Jr., Metropolis, Ill.

Fred Baxter, Nauvoo, Ill.

Jim Bright, Valley City, Ill.

W. L. Casper, Cobden, Ill.

S. C. Chandler, Carbondale, Ill.

Frank Chatten, Quincy, Ill.

Dave Dell, Grafton, Ill.

Curt E. Eckert, Belleville, Ill.

L. A. Floyd, Greenville, Ill.

Harry Hatcher, Roodhouse, Ill.

Fred Hawkins, Texico, Ill.
Vilas Hensel, Princeton, Ill.
C. T. Jeffries, Dix, Ill.
Bernard Y. King, Moline, Ill.
John F. Leahr, Griggsville, Ill.
Roy J. Newman, Martinsville, Ill.
C. E. Percels, Farina, Ill.
A. Lee Pray, LeRoy, Ill.
H. O. Rice, Champaign, Ill.
Chris Ringhausen, Jerseyville, Ill.
Roy Schwartz, Cobden, Ill.
C. E. Walkington, Tunnel Hill, Ill.

E. H. Regnier, Assistant Professor of Rural Sociology Extension and Radio Extension, University of Illinois College of Agriculture, has been largely responsible for publishing and distributing the reports.

And with that we conclude the 1945 spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by M. D. Farrar, Illinois State Natural History Survey.

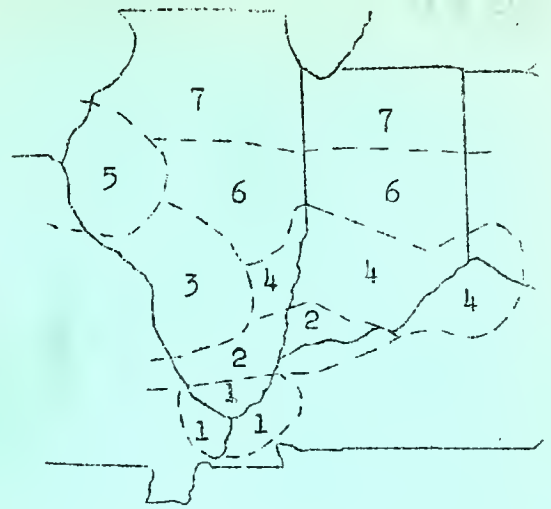
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois

to. 1--March 24-30, 1946



ANNOUNCER: Here's the first of the weekly spray service reports for 1946, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky and the U. S. Department of Agriculture.

General: Warm temperatures for the past three to four weeks have set the stage once more for an early spring. In general, tree development is slightly ahead of 1945, although in certain localities development this year is almost the same as last year. By March 27, prepink sprays on apples will have started as far north as Nauvoo, Illinois. Peaches should be in full bloom in this same area by March 30. The time is past for dormant spraying except in the northern one-third of Illinois. There is still time for scale sprays and the ground spray for scab in this area.

Apple growers still have time to spray off the loose bark throughout the tri-state area. Growers planning to use experimental DDT applications for codling moth control are warned to continue orchard sanitation as they would with any other schedule. The best time, although admittedly not the most convenient, to spray off the loose bark is during the codling moth pupation time. Pupae are much more susceptible to injury than are larvae when subjected to such treatment.

Pruning may still be continued if labor and time permit. Do not neglect fertilizer applications. Every bearing apple tree should receive at least 1/4 pound of ammonium nitrate per year of tree age, or the equivalent. Some orchards may require more nitrogen. Each grower should conduct a test in his own orchard, using different amounts on small blocks in order to determine the fertilizer requirements for his particular orchard. Any predictions are based on the continuation of the present warm weather.

(Area 1) Paducah-Villa Ridge: Elberta peaches were in full bloom March 18. Growers should be prepared for the shuck-split application for curculio control.

Delicious, Ben Davis and Winter Banana are in the late prepink to early pink stage, requiring sulfur sprays to protect the foliage from scab infection. Rains have been favorable for scab infection. Sulfur should be applied at least at weekly intervals because of the large number of mature spores.

No codling moth or Oriental fruit moth pupae have been found. Tarnished plant bugs were plentiful by March 18. One male curculio was jarred from Elberta on this date.

(Area 2) Carbondale-Vincennes-Henderson-Louisville, Kentucky: Most varieties of peaches are past the full bloom at Carbondale. The early shuck-split stage may be reached by the latter part of this week in some areas, at which time the first arsenical application for curculio should be used. It is probably too late for the full bloom brown rot application in most orchards.

Duchess are in full pink, approaching bloom, and a sulfur spray should be applied for scab control. Growers using a Fermate schedule in place of sulfur should start it at this time.

Most late varieties are in the prepink, while some, such as Delicious, are approaching the pink. Sulfur at weekly intervals is recommended.

(Area 3) Belleville-Hardin-Centralia: Most varieties of peaches should be approaching bloom. Plan the brown rot application of sulfur in the early to full bloom period. Most late varieties are in the prepink stage. Sulfur at weekly intervals is recommended.

(Area 4) Bedford-Lexington: Gage Elberta peaches are in full bloom. The bloom brown rot application should be made where needed.

Ben Davis, Delicious, Jonathan and Benoni are at the cluster bud stage, approaching early bloom. Aphids are present but not threatening damage. There was very little winter mortality of codling moth larvae.

Grapes may still receive the scale spray.

(Area 5) Quincy-Pittsfield: Apples are in the prepink stage. Sulfur at weekly intervals is recommended.

(Area 6) Peoria-Champaign-Lafayette: Apples are in the delayed dormant to prepink stage. Lime sulfur should be started by the latter part of this week.

(Area 7) Northern Illinois-Indiana: Apples are in the delayed dormant stage. Ground scab spray and scale sprays may still be applied unless trees develop too rapidly and enter the prepink stage the latter part of the week. Lime sulfur, two gallons to 100 gallons of water, should be applied as soon as the first foliage appears.

And with that we conclude today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey, and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana, with information compiled by Dwight Powell, Department of Horticulture, University of Illinois College of Agriculture.

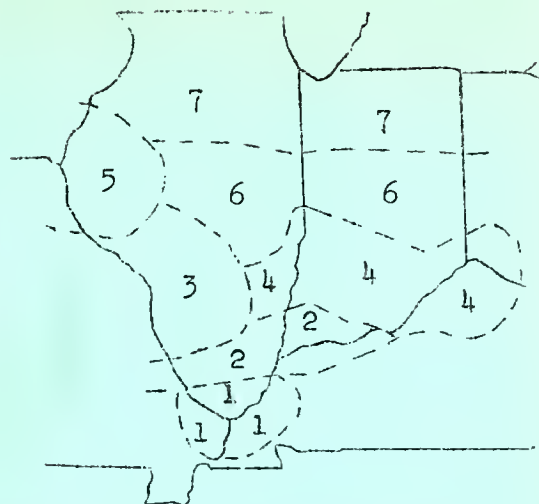
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 2--March 31-April 6, 1946



ANNOUNCER: Here's the second of our weekly spray service reports for 1946, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

General: Fortunately tree development is not advancing so rapidly as was expected.

On apples the important thing is to keep scab under control. If warm weather continues, scab sprays will be needed even in the northern Illinois orchards by April 5. It is doubtful whether scab infection has yet occurred in the southern and central areas to a serious extent. In general there have not been enough heavy rains to discharge spores adequately. But it is important to keep a fungicide residue on the foliage by sprays or dusts at least at weekly intervals throughout this early period.

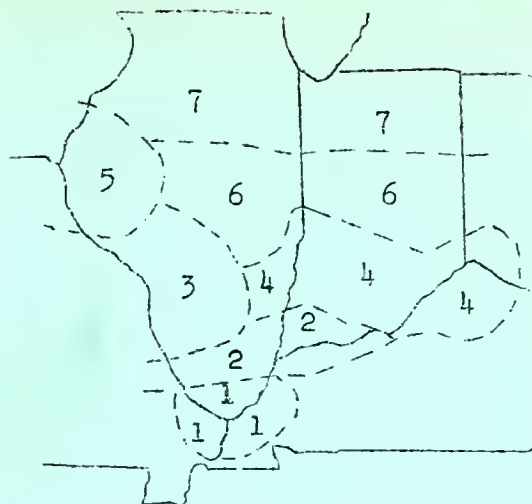
Blotch cankers are showing considerable development, with a high percentage ready to ooze spores. An early blotch infection could very easily occur in the southern areas under the correct moisture conditions with prevailing warm temperatures. Fermate, 1 pound per 100 gallons, is recommended as the fungicide substitute for sulfur on blotch-susceptible varieties.

Peaches are in full bloom to petal fall throughout most of the tri-state area. It is doubtful whether the early shuck spray will be applied this week, unless it is in the Paducah-Villa Ridge area. Growers should jar trees to determine the curculio population in their own orchards. Spring cankers of peach bacterial spot are very plentiful at Urbana. The first canker was observed March 22, which is a new record for that area.

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois

No. 3--April 7-13, 1946

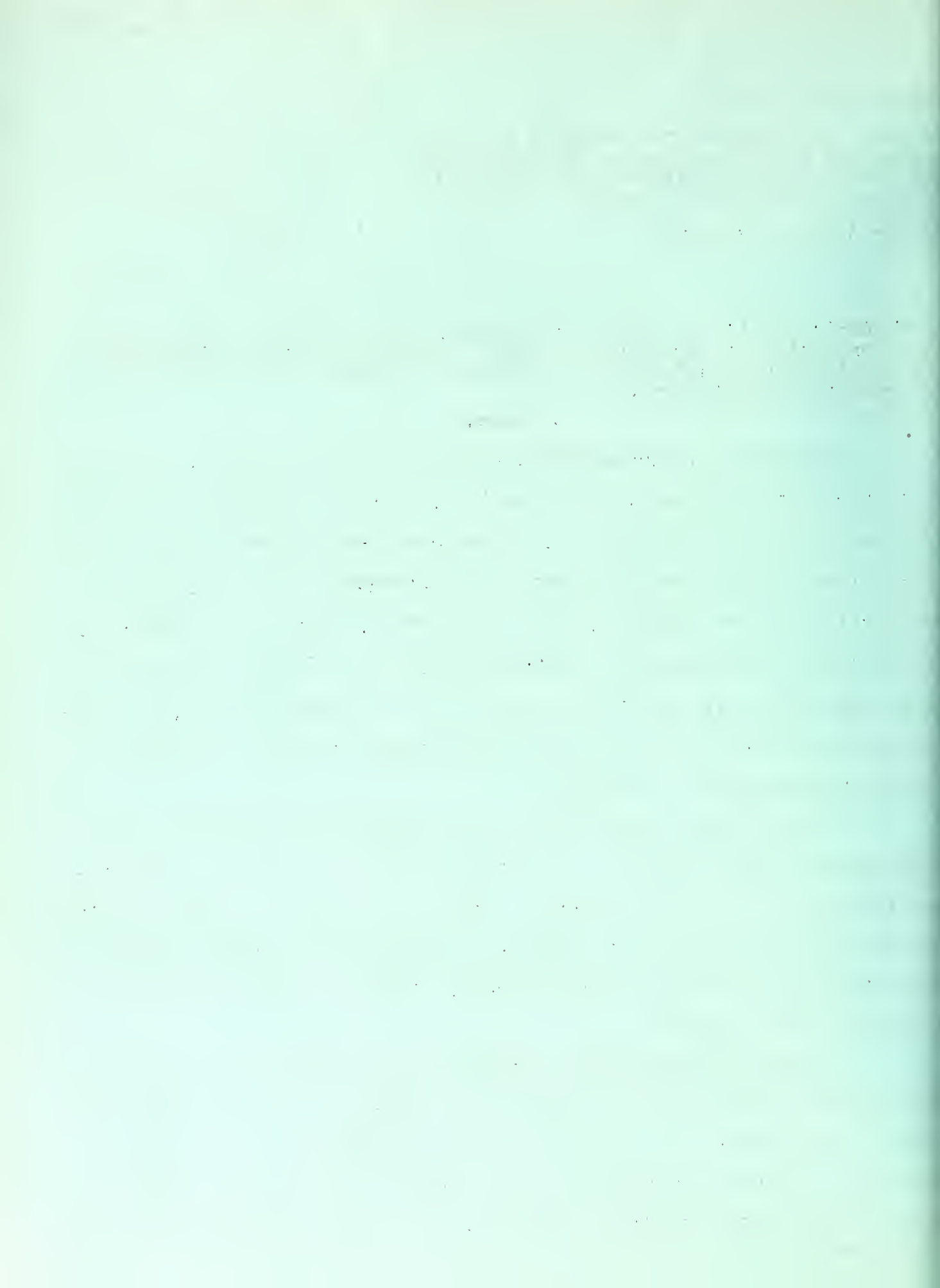


ANNOUNCER: Here's the third of our weekly spray service reports for 1946, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

In general, dry weather has prevailed over the tri-state area, with very little, if any, scab infection. A heavy discharge of spores is expected with the first rain. Inasmuch as most growers have sprayed with sulfur at least twice without spore discharge, it is likely that scab will not be of a serious nature this year. This will be calyx spray week in most of the south and south-central areas. In the peach-growing areas the shuck split application will go on this week. Curculio are more abundant now than a year ago, and in some cases they have migrated well toward the center of the orchard.

The following predictions and recommendations are based on a continuance of warm weather. Consult your experiment station circular for the various spray formulations. This is the last week that spraying off the bark or scraping will aid in destroying overwintering codling moths in the southern and central areas. After this week many adult moths will have emerged.

(Area 1) Paducah-Villa Ridge: Apples - The weather has not been favorable for scab development, and infection has not been seen to date. An abundance of ascospores remain to discharge in all parts of Kentucky. Codling moths are about 64 percent pupated. Adult emergence should start by the first of this week. An early and heavy first brood



attack is expected, which will make the calyx and first cover sprays of unusual importance. Substitute Fermate for sulfur, if possible, in order to start the summer oil sprays by the second cover. Do not forget the calyx top-off spray.

Peaches - On April 3, mature eggs were found in curculio adults. Jarring in western Kentucky showed that a record number are present in the orchards. In this area growers are advised to apply at least two arsenical dusts or sprays at 10-day intervals and to apply a third if high curculio populations continue. Two adults of the Oriental fruit moth have emerged at Princeton.

Strawberries - Blakemore are in full bloom, with a heavy crop prospect.

(Area 2) Carbondale-Vincennes-Henderson-Louisville, Ky.: At Vincennes bud development is two days ahead of 1945. Calyx sprays on all varieties of apples, except Rome, should be started by April 8; and do not forget the calyx top-off spray. Codling moth pupation reached 19 percent by March 29. Some adult emergence is expected by April 10 if warm weather continues. Be prepared to use oil early this year if it becomes necessary. Very few rosy aphids can be found at Vincennes; however, at Covington, Indiana, on April 2 they were abundant. European red mites have not appeared on the foliage. Red spiders are still in hibernation. In the Carbondale area all apple varieties should be receiving the calyx spray by Monday, April 8. Varieties such as Duchess are past this stage. Do not overlook the calyx top-off spray. Codling moth pupation continues rapidly, and moth emergence is expected shortly after April 8.

On peaches, by April 8 start the shuck application of lead arsenate by either dust or spray. If sprays are used, include the zinc sulfate-lime safener instead of only lime. Apply sufficient dust per mature tree, at least 1/2 pound from one side per application. Curculio are four times more abundant now than last year at this time, as shown by jarrings. Also they have migrated well toward the center of the orchard.

An early heavy drop of peaches is occurring, which may be partly due to brown blossom blight and partly due to natural causes. No insect is responsible for this condition.

Tree jarring shows that the number of tarnished plant bugs is diminishing, while the stink bug population is increasing.

(Area 3) Belleville-Hardin-Centralia: Apples - Duchess should receive the first cover spray this week. Varieties such as Jonathan and Delicious should receive the calyx spray by April 8. Other varieties such as York will probably not reach the calyx period before April 10. Do not forget the calyx top-off spray.

Peaches are starting to split the shuck, and some blocks should be ready for the shuck split arsenical application by April 10.

The weather has been dry, with only occasional light showers. It is unlikely that primary scab infection has yet occurred to a serious degree.

(Area 4) Bedford-Lexington-S.W. Ohio: Most apple varieties are in full bloom near the Ohio line. Calyx sprays should start on earlier varieties by April 8.

Calyx spray should start on Jonathan and Delicious by April 6-8. No codling moth pupation had occurred by April 4.

On peaches, shuck splitting has occurred. Curculio were jarred from the trees on April 3. The first arsenical applications should start shortly after April 8. If a spray is used instead of a dust, use 3 pounds of lead arsenate plus an excess of lime.

Premier strawberries began blooming March 31. The first spray of 4-6-100 Bordeaux should be applied immediately.

(Area 5) Quincy-Pittsfield: Apples - Almost all varieties are in full bloom, with good pollinating weather prevailing. The calyx application should be started by April 10 if normal weather prevails and petal fall occurs.

Peaches are in the petal fall stage. The first arsenical application should probably be made by April 12 to 13, when the shucks are one-half off.

(Area 6) Peoria-Champaign-Lafayette: At Lafayette, bloom of Starking is expected by April 7. Weather conditions are favorable for a heavy scab infection during the blooming period. Fermate or mild sulfurs should be in readiness for possible fungicide applications during this time.

At Champaign, bloom of Delicious, Jonathan and Grimes is expected by April 18 unless the present cool weather continues. Continued fungicide applications are suggested to prepare for a heavy scab infection following the first rain. Thus far perithecia are mature, but discharge has not occurred.

(Area 7) Northern Illinois-Indiana: At Rock Island, Illinois, most varieties are in the full pink, which means that the second sulfur fungicide should be applied. Prepare for a heavy spore discharge following the first rain of 1/2 inch or more. Thus far it is not likely that scab infection has occurred.

And that concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell, of the department of horticulture at the University of Illinois.

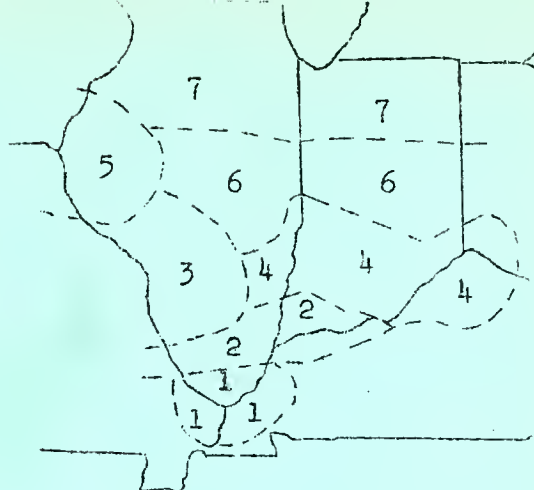
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois

No. 4--April 14-20, 1946



ANNOUNCER: Here's another of our weekly spray service reports, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

In general, cool, rainy weather has delayed the rapid development of trees and pests. This will be scab control week in all but the southernmost areas, where infection has already occurred. Most orchards in the south-central, central and northern areas are just past or in bloom. In either case, scab infection is likely to be severe if foliage is left unprotected. Codling moth pupation has been delayed but will continue rapidly with the first warm weather.

(Area 1) All of Kentucky and Villa Ridge, Illinois: Apples - Most orchards as far north as Louisville will be ready for the first cover spray by April 15. Orchards in extreme northern Kentucky will be receiving the calyx spray this week. The first codling moth emerged at Paducah on April 9. Because of the heavy pupation, rapid emergence is expected with the return of warm weather. Scab infection was observed at Princeton. Indications are that further infection may have occurred with the favorable weather. Sulfur in the first cover is recommended. In northern Kentucky overwintering scab spores are still present in the old leaves.

Peaches - Shucks are off in the Paducah section, so the 10-day spray for curculio and scab should be applied by April 15. In the

1. The purpose of this document is to provide information regarding the activities of the [redacted] and the [redacted] in the [redacted] area. This information is being provided to you for your information only and is not to be distributed outside of your organization.

Background

2. The [redacted] and the [redacted] have been active in the [redacted] area for some time. They have been involved in a variety of activities, including [redacted] and [redacted]. The [redacted] has been particularly active in the [redacted] area, where they have been involved in a number of [redacted] and [redacted] activities. The [redacted] has also been involved in a number of [redacted] and [redacted] activities in the [redacted] area.

3. The [redacted] and the [redacted] have been active in the [redacted] area for some time. They have been involved in a variety of activities, including [redacted] and [redacted]. The [redacted] has been particularly active in the [redacted] area, where they have been involved in a number of [redacted] and [redacted] activities. The [redacted] has also been involved in a number of [redacted] and [redacted] activities in the [redacted] area.

Henderson and Louisville section, most shucks are off. In the extreme northern Kentucky area petal fall has occurred.

Curculio are abundant and contain mature eggs ready for egg-laying.

(Area 2) Carbondale-Vincennes: There has been little tree development since April 8. Most growers have applied the calyx application and should be ready for the first cover by April 15. With normal April weather, codling moth hatch is unlikely before the week beginning April 28. Some moth emergence will occur with the first warm weather.

Most growers will be applying the first cover by April 15. Cool weather has delayed moth emergence so that the interval between the calyx period and first hatch will not be so short as expected. Growers planning to use DDT in the crucial sprays could probably wait until the third cover before starting.

Scab and blotch sprays should be continued through this cool, rainy period. Don't apply Bordeaux for blotch unless good drying conditions prevail.

Curculio migration into the peach orchard has been slowed with the cool weather. Another arsenical application is suggested this week to cover unprotected fruit.

(Area 3) Belleville-Hardin-Centralia: Apples range from full bloom to the petal fall period. The calyx application should be applied in this area by April 17. Most orchards are vulnerable to scab infection because of unprotected foliage which developed during the pollinating period. It is very likely that the first heavy discharge of spores is occurring now (April 11).

On peaches the first shuck application should be made as soon as an appreciable amount of fruit is exposed.

(Area 4) Bedford-Lexington-S.W. Ohio: Codling moth pupation is progressing rapidly. Rosy aphids are present but not serious. By April 11 Benoni were past the calyx spray stage. Calyx and top-off sprays should be applied to most varieties immediately.

Shucks are mostly off Gage Elberta peaches. Curculio are very active. No twig attack by the Oriental fruit moth had occurred April 11. Peach bud moth is not of serious nature.

There is still time for a 4-6-100 Bordeaux on grapes for black rot control.

Aroma strawberries are blooming heavily. Crown borer should begin to lay eggs by April 21.

(Area 5) Quincy-Fittsfield: Apples should be receiving the calyx application by April 15. Don't forget the calyx top-off spray. Many orchards should start the first cover or seven-day spray by April 17 to 19. Continue to use a fungicide for scab through the first cover spray. Very little if any discharge of spores had occurred by April 11.

(Area 6) Peoria-Champaign-Lafayette: The calyx application should be started by April 17 to 22 in most orchards of this area. A bloom fungicide for scab may be necessary if cool weather delays tree development.

(Area 7) Northern Illinois-Indiana: Orchards in this area will be in full bloom most of this week. If cool, rainy weather continues, a fungicide should be applied for protection against scab.

And that concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

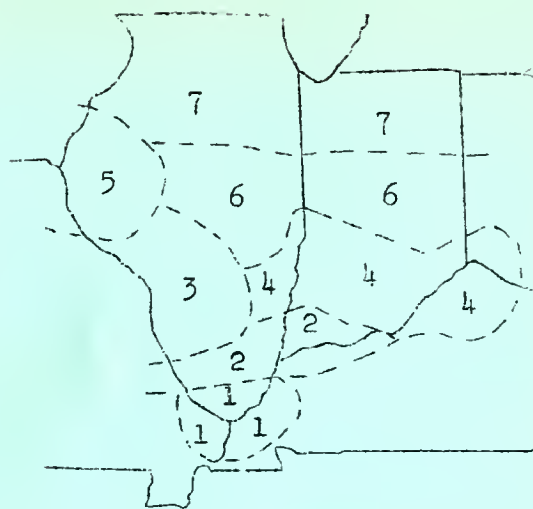
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois

No. 5--April 21-27, 1946



ANNOUNCER: Here's another of our spray service reports, prepared each week with the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

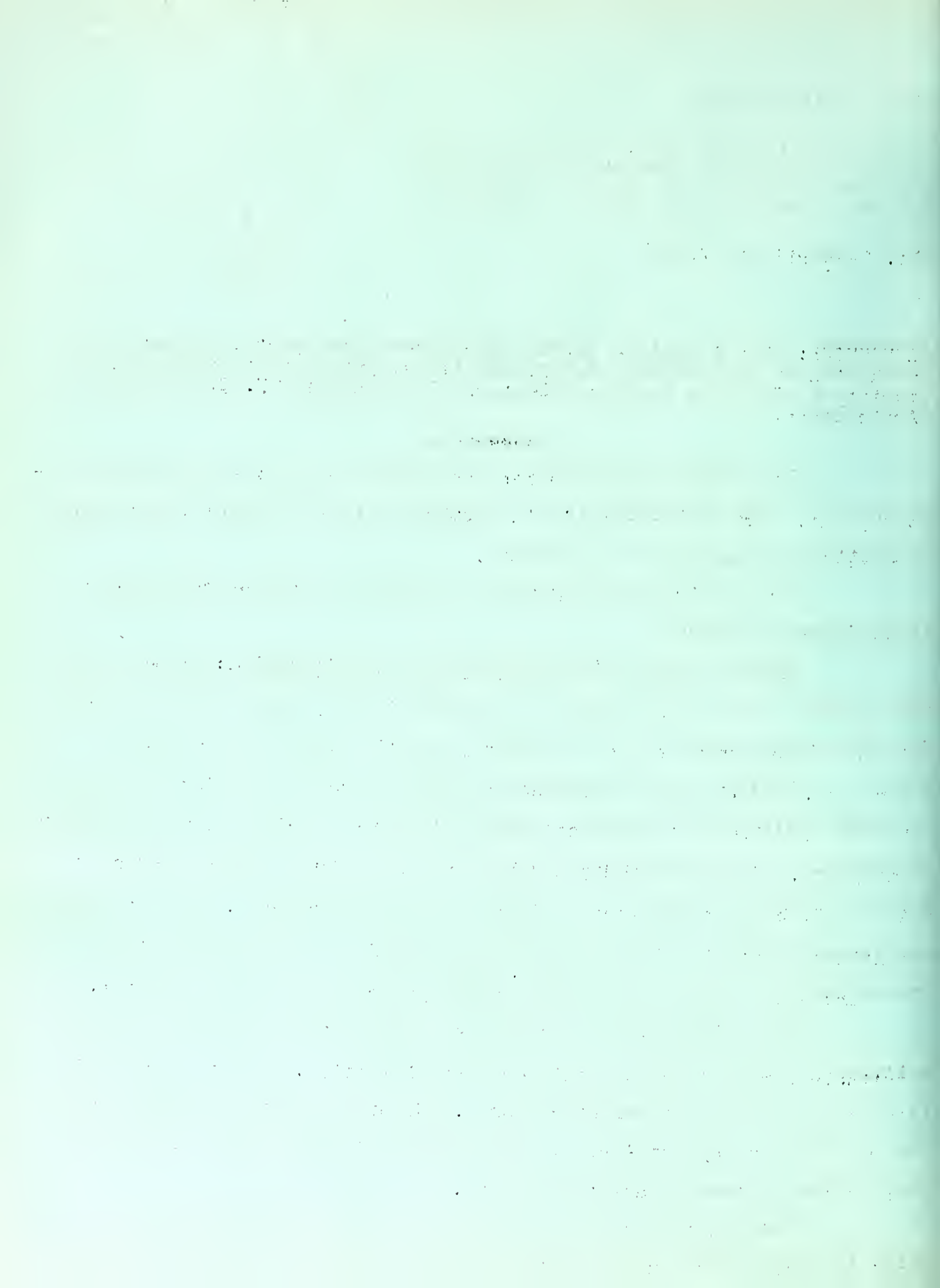
In general cool weather has delayed apple tree and insect development. Scab protection is the number one item on apple, and curculio protection is number one on peaches.

No definite determination of degree of injury from recent freezes has been made.

(Area 1) All of Kentucky and Villa Ridge, Ill.: Recent freezes have caused little or no damage to the fruit crop. For apples in western Kentucky most growers should be ready for the second cover spray by April 22. Codling moth emergence has started as far north as Henderson in cages, while in the Paducah region bait trap collections show orchard emergence. No moth activity had been reported farther north Thursday April 17, but warm weather will bring a heavy emergence. If cool weather continues, hatching is not expected before May 1. Western Kentucky growers should plan to start their DDT program in the second cover.

Very little apple scab has appeared but the weather has been suitable for both primary and secondary infection. So scab protection is needed all over the Kentucky area. Cedar-apple and quince-rust cankers were producing spores April 15, and fermate is recommended in orchards where these diseases are troublesome.

Peach shucks in the southern half of Kentucky have fallen, while in the northern region the shucks are starting to split. Because



of the heavy flight of curculio, growers are advised to keep their peaches protected with lead arsenate dusts or sprays at ten-day intervals or more often through this period. Sulfur should be added to the sprays for scab control.

The second Bordeaux spray for grapes is now in order in western Kentucky.

(Area 2) Carbondale-Vincennes: Some damage from freezes has occurred on both apples and peaches at Vincennes. The full extent cannot yet be determined. Codling moth emergence from under bark has occurred in local orchards, but dusk and dawn temperatures have been too low for normal activity. No moth emergence has been reported from seventy bait traps, and it is believed that egg laying has not occurred. For this reason no poison sprays other than the seven day, or first cover are needed for codling moth control between the calyx application and about May 4. Egg hatch is not likely to occur before May 5 to 6. Rosy aphids are increasing in number but not enough to warrant nicotine applications. Predator activity is expected to increase enough to check them as soon as high temperatures prevail.

Apples at Carbondale are approaching the second cover spray period. One moth emerged in a cage at Anna, but by Thursday (April 17), no emergence had occurred at Carbondale. Egg hatch is not expected before May 1. Summer oil is not recommended this week. Growers should prepare to use oil, however, because a heavy emergence is expected with the first warm weather. A considerable number of adult leafhoppers were noted feeding April 17. Growers planning to use DDT in their early codling moth schedule need not be concerned about leafhoppers. Protection from scab and blotch is recommended during this cool, wet period.

On peaches curculio numbers are still high although there are fewer than two weeks ago. Growers should keep their fruit protected by applications of lead arsenate, dust or sprays. Considerable stung fruit has been observed in some localities. A few wilted twigs were observed in Union county from the first brood of Oriental fruit moth.

(Area 3) Belleville-Hardin-Centralia: Most growers had applied or were applying the first cover spray by April 17. Codling moth pupation is high (40 to 60 percent), but no emergence has occurred. Continued protection from apple scab infection is recommended. On peaches the shucks are mostly off, and applications of arsenical sulfur dusts or sprays are recommended at ten-day intervals for curculio and scab control.

(Area 4) Bedford-Lexington-S.W.Ohio: Codling moths are emerging from packing sheds but not from orchards. The calyx spray may still be applied to Rome Beauty. There has been no noticeable increase in aphid numbers. Heavy rains last week end made continued scab protection necessary. Shucks are mostly off the peaches. Protection with arsenical applications from curculio attacks is necessary. If arsenical injury on the foliage appears, apply a spray of just lime or zinc sulfate-lime. Do not use a coarse spray or high pressures on peaches. The second 4-6-100 Bordeaux for black rot control on grapes should be applied by April 23. Strawberry blooms out of the cluster were killed April 17, by a temperature of 29° F.

(Area 5) Quincy-Pittsfield: Apples are at the calyx or petal fall stage with some localities probably in the seven-day cover period. Scab infection was observed at Quincy April 17. Continued protection from scab is recommended. Codling moth pupation is about 15 percent with no moth emergence April 17.

(Area 6) Peoria-Champaign-Lafayette: Cool weather has delayed tree development. By April 23 most orchards will be in the petal fall stage. Sulfur sprays at weekly intervals for scab control are recommended. The first scab infection was found on a seedling tree April 14, at Urbana. A heavy discharge of spores occurred April 12.

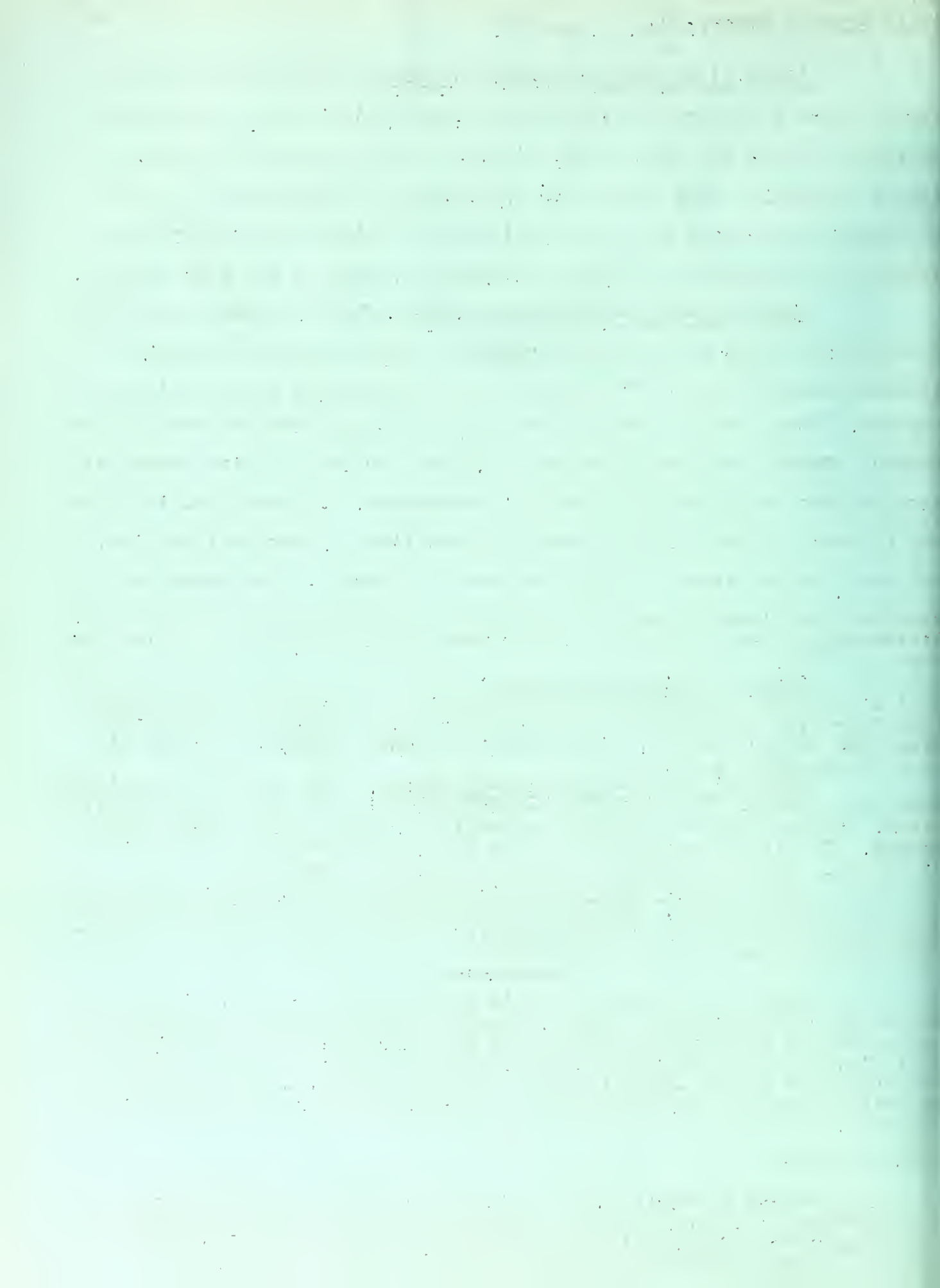
(Area 7) Northern Illinois-Indiana: Cool weather has delayed the early bloom period. Duchess are in full bloom with late varieties just approaching bloom. Continued sulfur applications at weekly intervals are recommended for scab control.

And that concludes today's spray service report. It was presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

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RSB:pm 4-19-46

Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914



SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois



No. 6--April 28-May 4, 1946

ANNOUNCER: And here's our weekly spray service report, prepared with the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

(Area 1) Western Kentucky & Villa Ridge, Ill.: On apples - Codling moth emergence is very heavy. Egg hatch is expected by April 30 or May 1. Growers should be applying oil sprays at this time.

Peaches - Curculio are still active. Another arsenical application is recommended in the Paducah-Mayfield area. Twigs wilted from Oriental fruit moth are abundant, indicating a heavy start for this season.

(Area 2) Carbondale-Vincennes: At Vincennes a heavy codling moth emergence started April 19. The first larval hatch is expected May 1. The peak hatch is expected during the week of May 5. It is predicted that the first brood will extend over a longer than normal period, and growers should prepare for an extra spray.

At Carbondale, the first emergence of codling moths in cages occurred April 18, and bait traps caught the first moths April 19. The first hatch should occur by May 1. The first oil spray should be started at this time. Curculio is still very abundant in peach orchards. Unless the fruit is protected with arsenical applications at seven- to 10-day intervals throughout this period, there will undoubtedly be many wormy peaches this year. A few larvae have already been found in the young peaches.

(Area 3) Belleville-Hardin-Centralia: There was no codling moth emergence at Belleville by April 24. At Dix one moth emerged in a cage April 23. Warm weather may bring a heavy emergence this week.

On peaches, curculio are still numerous. Arsenical applications at seven- to 10-day intervals throughout this period are recommended to prevent wormy fruit.

(Area 4) Bedford-Lexington-S.W. Ohio: At Covington, Ky., the first codling moth emerged April 22. Warm weather may bring a peak emergence this week.

At Bedford, egg laying by the codling moth has not occurred. A few Oriental moth larvae are entering peach twigs. Curculio adults are still active, and so arsenical protection on fruit is essential. There is still time for the second 4-6-100 Bordeaux spray on grapes.

(Area 5) Quincy-Pittsfield: Some apple growers may be starting the second cover this week. No codling moth emergence has been reported, so there is still time to spray off the loose bark.

(Area 6) Peoria-Champaign-Lafayette: Apple orchard development ranges from full bloom to petal fall, depending on the location. Use mild sulfur fungicides from now on, as lime-sulfur sprays are likely to be injurious. Grapes should receive a 4-6-100 Bordeaux plus 4 pounds lead arsenate. There is still time to spray off the loose bark.

(Area 7) Northern Illinois-Indiana: Most varieties will be in full bloom to petal fall. A calyx application of 3 pounds lead arsenate, 3 pounds hydrated lime, and 8 pounds wettable sulfur is suggested when 75 percent of the petals have fallen. There is still time to spray off the loose bark.

That concludes today's spray service report. It was presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. The report was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

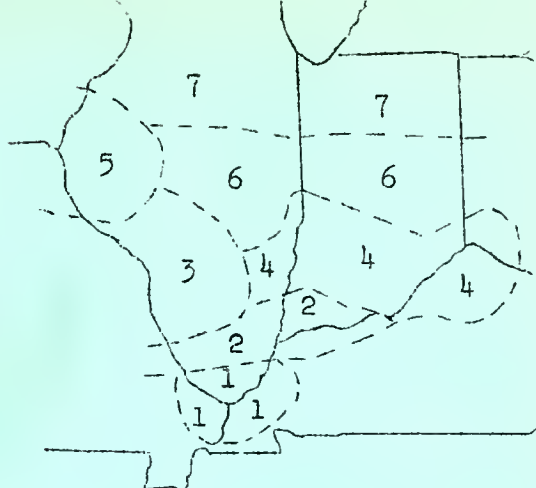
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RSB:pm 4-26-46

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois

No. 7--May 5-11, 1946



ANNOUNCER: Here's another of our weekly spray service reports, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

(Area 1) Western Kentucky and Villa Ridge, Ill.: Codling moth activity has been reduced as a result of cool, rainy weather. Egg hatch was not reported by May 1; however, with the return of warm weather, egg hatch and more egg laying should occur. It is now time to start DDT if its use has been planned. Additional fungicides are likely to be profitable because of weather favorable for scab development.

Adult curculio are still plentiful around edges of the peach orchards. Another arsenical application is recommended in the Paducah section.

(Area 2) Carbondale-Vincennes: Because of cool, rainy weather since April 23, codling moth activity has been at a low level. No egg hatch had occurred by May 1, but the first eggs should hatch with the first warm day. A heavy egg hatch should occur this week. The spring brood moth activity is expected to reach its peak during the next two or three days of warm weather. Emergence will extend into June, and thus a long period of first brood attack is anticipated.

Some orchards are showing a considerable number of rosy aphids. Nicotine sulfate, one pint to 100 gallons, is recommended under such conditions. In view of the nicotine shortage, such a spray should not be used unless the aphid infestation is severe enough to demand it.

Blotch sprays should be continued on blotch-susceptible varieties.

Peach trees still show some curculio. Cool weather has probably reduced activity temporarily. Oriental fruit moth infestation is considered light at the present time.

(Area 3) Belleville-Hardin-Centralia: Very little moth emergence ^{had} occurred from cages. By May 1 one moth/emerged at Dix, one at Grafton and none at Belleville. A heavy emergence is expected this week with the first period of warm weather. Scab is very light in sprayed orchards, but a considerable amount of secondary infection is appearing on unsprayed trees. Blotch sprays are recommended on susceptible varieties.

On peaches, it is expected that curculio activity has temporarily decreased during the recent cool, rainy weather. A continuance of activity is expected with warm weather.

(Area 4) Bedford-Lexington-S.W. Ohio: At Bedford, Ind., cool weather has decreased codling moth activity. Egg hatch will probably not occur until after May 5 with the first warm weather. Rosy aphids are threatening. In problem orchards nicotine sulfate, 1 pint to 100 gallons, is recommended. A continuance of mild sulfur for scab control is suggested.

On peaches, curculio are still active. A considerable hatch of Oriental fruit moth larvae began entering the twigs April 30. Grapes may still be given a 4-6-100 Bordeaux before the blooms open.

At Lexington, Ky., the first moth emergence occurred April 29. Adult leafhoppers seem more abundant than usual for this time of year.

(Area 5) Quincy-Pittsfield: No codling moth emergence has been reported. Scab is very light in well-sprayed orchards but is showing severe infections in poorly cared for blocks. Fungicide sprays are recommended for this week. There is still time to spray off loose bark.

(Area 6) Peoria-Champaign-Lafayette: Frost damage has been severe in some orchards. If a crop is not anticipated, continue scab sprays for foliage protection. Good foliage is important to assure fruit bud formation for next year. Mild sulfur at weekly intervals throughout this period is recommended.

(Area 7) Northern Illinois-Indiana: Recent rains have caused a heavy discharge of scab spores. Most growers are applying either the calyx or first-cover sprays in which mild sulfur, 7 pounds per 100 gallons, should be included.

And that concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell, of the department of horticulture at the University of Illinois.

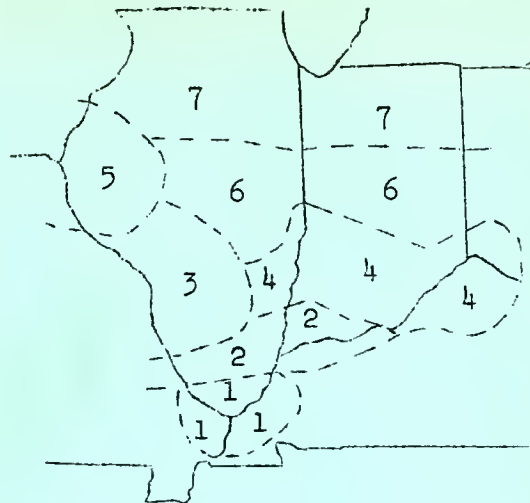
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JRW:pm 5-3-46

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois

No. 8--May 12-18, 1946



ANNOUNCER: And now, here's our weekly spray service report, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

(Area 1) Western Kentucky and Villa Ridge, Ill.: In general, fruit development was slow during the past week. Strawberry harvest is well advanced in western Kentucky, with harvest under way well upstate.

Cage and orchard emergence of codling moths is well under way throughout the entire state. Further egg-laying can be expected on every warm, nonrainy evening. First worms were found in young apples at Paducah May 6 and 7. Apple growers from Louisville south should protect their crops from this worm hatch at once if they have not sprayed within the past 10-day period. Hatching as well as egg-laying can be expected to mount rapidly with the return of warm weather.

Plum curculio adults are generally somewhat less abundant in well sprayed and dusted orchards than a week or two earlier.

Some brown rot has been seen in green plums and peaches stung by curculios. Conditions have been very favorable for apple scab development, especially in northern Kentucky. An additional sulphur application is suggested there, and growers in western Kentucky are also generally putting sulphur in their present apple sprays and leaving out oil in this application.

(Area 2) Carbondale-Vincennes: At Vincennes, codling moth eggs deposited April 18 started hatching May 5. Eggs deposited April 22

were hatching May 8. The rate of hatch should decrease until May 18, at which time some increase is expected. Moth activity for this brood should remain at a peak during the next warm period of two or three days. It appears doubtful whether more than 30 per cent of the spring brood has emerged. For the present the usual interval between first-brood sprays can be increased two or three days.

At Carbondale, codling moth activity decreased with the cool weather. Intervals between sprays should be lengthened at least two or three days to give protection through a prolonged first-brood period. The first worm entrance was found May 4. Rosy apple aphid is severe in many orchards. Leafhoppers are increasing in number. Growers using DDT will have adequate leafhopper control. If the use of DDT is not planned, nicotine sulfate, 1-800, is recommended for leafhopper reduction.

Peaches still show curculio to be active. Dusting should be continued when the foliage is dry. If sprays are used, make an additional application and do not forget the arsenical safener spray.

(Area 3) Belleville-Hardin-Centralia: Codling moth emergence in cages at Dix, Ill., started May 2 and continued through the 5th, when cool weather slowed up activity. At Grafton emergence occurred May 5 and 6 (the latest report). No emergence is reported from Belleville. Growers should be applying the third cover this week. Cool weather is lengthening the first-brood period. In order to give protection from curculio and codling moth for a longer period and still not apply too many sprays, it is advisable to lengthen the usual interval between sprays at least two or three days. On peaches curculio are still active. It is suggested that the interval between arsenical applications be lengthened to about 10 days.

(Area 4) Bedford-Lexington-S. W. Ohio: Codling moth activity decreased by cool weather. A few eggs are expected to hatch about May 11.

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 9--May 19-26, 1946



ANNOUNCER: Here's another of our weekly spray service reports, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

(Area 1) Western Kentucky & Villa Ridge, Ill.: Codling moth eggs are hatching on apples as far north as Louisville. Unhatched eggs and fresh entries are prevalent in the Henderson-Paducah section, and sprays should be applied at 10-day intervals. The addition of either Fermate or weak Bordeaux to the sprays is suggested for scab control.

On peaches, because curculio adults are scarce and because of previous heavy arsenical applications, further dusts or sprays are not recommended now. Curculio worms are leaving dropped fruit as far north as Louisville. Present indications are that most western Kentucky growers will need second-brood applications in late June or early July. The percentage of twigs wilted from Oriental fruit moth is not so high, but a large number of the early worms have entered the young fruit.

(Area 2) Vincennes-Carbondale: At Vincennes about 50 percent of the codling moths have emerged. The peak of moth activity is still expected to follow the next two- or three-day period of high temperatures (85°-95° F.). Eggs deposited since April 27 had not hatched May 15. The peak of first-brood hatch cannot occur before late May or early June. For the present a 12- to 14-day interval between sprays should not be too long. Little would be gained by spraying nicotine now for rosy aphid control. Fungicides are still considered essential for scab protection. Many growers are still using sulfur. Fermate or weak Bordeaux is suggested.

At Carbondale, codling moths have continued to emerge in small numbers during the warmer days. There was no increase in fresh entries during the past week. Lengthening the interval between sprays is suggested. Apple scab is light, but some protection is necessary. With 100 gallons, four pounds of mild sulfur, one half pound of Fermate or 1/2-1-100 Bordeaux can be used. Be careful of sulfur-oil injury.

On peaches, curculio are still active. Arsenical protection is necessary.

(Area 3) Belleville-Hardin-Centralia: Some codling moth emergence continued at Dix, Illinois, up to May 13. About 5 percent emergence has occurred at Grafton, while at Belleville it has just started. No egg-laying has been observed. Continued protection against scab is suggested. Increasing the interval between sprays to 10 or 12 days through this period is recommended.

Curculio activity has decreased with cool weather. Heavy rains have removed most of the arsenical residues. At least one more poison application is recommended for this first-brood infestation.

(Area 4) Bedford-Lexington-S.W. Ohio: At Bedford, the night of May 15 was favorable for codling moth egg-laying. The peak moth emergence has not yet been reached, according to bait trap records. Increasing the interval between sprays is suggested to care for a long first-brood period. Rosy aphid is severe, with very little predator control. Nicotine sulfate, 1-800, is suggested if the situation demands it. Fungicides are still suggested for scab protection.

Curculio are still active on peaches, indicating a need for continued arsenical protection.

At Lexington, about a 30 percent codling moth emergence has occurred, but there has been little weather suitable for egg-laying. A program of lead arsenate fortified with DDT is suggested in severe codling-moth-infested orchards, the sprays to be applied at about 10-day intervals.

(Area 5) Quincy-Pittsfield: Bait trap records at Griggsville show that codling moth emergence started May 10. At Payson some emergence has occurred from the exposed parts of the trunk. However, weather has not been favorable for egg-laying. Increasing the interval between sprays is suggested to care for a prolonged first-brood period, and continued protection against scab is recommended.

(Area 6) Peoria-Champaign-Lafayette: There is no evidence of codling moth emergence. Mild fungicides to keep the foliage and fruit protected from scab infection are recommended.

(Area 7) Northern Illinois-Indiana: Codling moth emergence has not occurred. Continued protection from scab infection at 10-day intervals with mild fungicides is recommended.

And that concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell, of the department of horticulture at the University of Illinois.

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Play safe and SPRAY SAFE--warn the National Safety Council and the U. S. Department of Agriculture. You know, all insecticides and fungicides are more or less poisonous--so protect yourself. In other words, if you find the spray blowing back in your face, wear a respirator. And of course, keep your body well covered, your sleeves rolled down and gloves on. Afterwards, it's wise to wash up and change your work clothes. You'll find this a good investment in safety.

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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois

No. 10--May 26-June 1, 1946



ANNOUNCER: It's time for our weekly spray service report, compiled from information given by entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, and the U. S. Department of Agriculture.

(Area 1) Western Kentucky and Villa Ridge, Ill.: The return of

warm weather should increase codling moth hatching over the entire state. Kentucky apple growers should keep up codling moth protection against the prolonged first-brood period. Heavy packing-shed emergence started at Henderson, Kentucky, May 18. Apple scab is spreading in poorly sprayed orchards, and growers should include some fungicide for scab. Weak Bordeaux or Fermate is suggested. Where bitter rot has been serious, full-strength Bordeaux sprays are needed.

Curculio are leaving dropped peaches from Louisville, Kentucky, south, but are still in the fruits at Villa Ridge. Picking up dropped fruit may help to reduce the preharvest brood. Brown rot is starting in early and late peaches, particularly in curculio-injured fruits. Dusting with sulphur and removing diseased fruit are important to prevent a build-up of brown rot.

(Area 2) Vincennes-Carbondale: The continued cool, rainy weather has retarded codling moth activity. Many moths have died before depositing eggs. Eggs deposited before May 8 hatched by May 21. Only 3 percent as many moths have been taken in traps since May 8 as before. About half of the moths are still to emerge. Egg-laying will increase sharply with a few days of warm weather. Sprays should be applied at 12- to 14-day intervals until warm weather, when the interval should be shortened to seven days. Some fungicide should be included until the weather clears.

Curculio and plant bugs are still abundant on peaches, causing serious cat-facing. Some arsenical injury may be expected on peach where arsenical dusts are continued. Special dusts of lime between arsenical dusts will help to correct burn from arsenical dust.

At Carbondale 75 percent of the codling moths have emerged. New entrances are still scarce but are expected to increase rapidly with warm weather. Complete protection of the fruit is essential.

Curculio are less abundant than a month ago but are still more plentiful than during the peak last year. Some blocks have been abandoned because of the heavy drop from curculio. Drop fruits are 40 to 100 percent infested with curculio larvae. Picking up all drop fruit before disking the orchard or thinning the crop is advised where labor is available. If the curculio are allowed to mature, the preharvest brood may be the heaviest ever experienced in the state.

Periodical cicada are abundant and are causing damage to young orchards in Jersey and Calhoun counties. Spraying young trees with three to four pounds of actual DDT per 100 gallons of water is suggested as a possible control. The insects will disappear after they have laid their eggs.

(Area 3) Belleville-Hardin-Centralia: Emergence of codling moth has been rather slow but steady--35 percent of the adults have emerged. Emergence will increase rapidly with a few days of warm weather. Then the interval between sprays should be reduced to seven days.

Curculio are still abundant on peaches. Dropped fruits are 40 to 100 percent wormy. Unless an arsenical application has been made recently, it should be done at once. In orchards where curculio have caused a heavy drop of fruit, picking up and destroying dropped fruits is advised where labor is available.

(Area 4) Bedford-Lexington-S. W. Ohio: At Bedford a heavy codling moth hatch started May 21-22 and has continued. At Lexington moth emergence was heavy May 15-19, with a heavy flight expected during the first warm spell. Hatch of eggs will probably be heavy during the first week

of June. In southern Ohio 50 percent of the moths have emerged, although no entrances had been reported by May 20. Orchards receiving the second-cover spray the week of May 20 will need another spray by June 1.

Curculio are still serious on peaches. At Lexington trees are dropping 20 to 1,200 fruits, 2 to 8 percent wormy. At Bedford six to eight adult curculio were jarred per tree May 22. Arsenical protection is needed in infested peach orchards. Grapes are in full bloom. Half of the strawberries are rotting in the field.

(Area 5) Quincy-Pittsfield: A moderate codling moth flight occurred May 14 to 18. This will increase rapidly after the past three warm days. Apples should be well protected in this area through the last week in May and the first week in June. Some fungicide, such as weak Bordeaux or Fermate, should be added in orchards where apple scab is serious.

(Area 6) Peoria-Champaign-Lafayette: About 30 percent of the codling moths have pupated, with no adults to date. Hatch should not occur before the first week in June. Continued use of mild fungicides is recommended at 10-day intervals as protection against scab infection.

(Area 7) Northern Illinois-Indiana: A small emergence of codling moths started at Rock Island May 15 to 22. First hatch will probably occur the first week of June. Use of mild fungicides is recommended to protect foliage and fruit from scab infection.

Today's spray service report was presented through the cooperation of fruit growers and federal and state agencies. Included are the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by M. D. Farrar, of the Illinois State Natural History Survey.

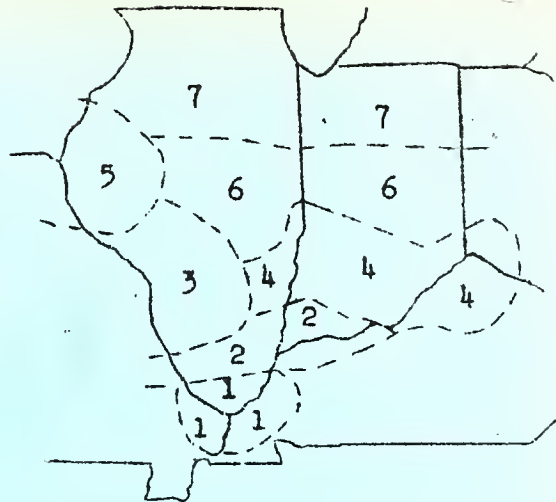
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 11--June 2-8, 1946



ANNOUNCER: Here's another of our weekly spray service reports, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

General: Watch for bitter rot development in problem orchards. 4-6-100 Bordeaux or Fermate, two pounds per 100 gallons of spray, at weekly intervals for at least four sprays is recommended. Remove dropped peaches from your orchard to reduce second-brood curculio, at least from Carbondale north. Periodical cicada are prevalent over the southern and western Illinois areas, but a method of control is not generally suggested.

(Area 1) Western Kentucky and Villa Ridge, Ill.: Codling moth is still being delayed by cool weather. There could still be considerable first-brood infestation if conditions become favorable. Thus far about 75 per cent of the moths have emerged at Princeton and about 60 per cent at Henderson from emergence cages. Weak Bordeaux in the codling moth sprays is suggested to aid in preventing secondary scab.

Some early peach harvest has started. Brown rot is starting to appear. Sulfur and lime dusts and sprays should be used for controlling this disease and to help prevent arsenical injury.

(Area 2) Vincennes-Carbondale: At Vincennes at least 40 per cent of the codling moths in emergence cages and 30 to 35 per cent of those in the orchards have not yet emerged. Bait-trap catches have

increased slightly this week. There is yet no need to shorten the interval between sprays to less than two weeks, except in orchards where fresh injuries can readily be found.

At Carbondale codling moths are still developing slowly and are producing very few new entries. Additional sprays on Transparent are probably not necessary with the prospects of an early harvest. If necessary, nicotine should be used. Blotch is appearing on Transparent, but fungicide sprays are not recommended because of the nearness to harvest. Other varieties, such as Duchess, should be sprayed with 4-6-100 Bordeaux for blotch, if Fermate is not available.

Secondary scab should be kept under control with weak Bordeaux spray.

On peaches not over 10 per cent of curculio have left dropped fruit. Removing drops from the orchard is still advisable to reduce second-brood. Disking for curculio control should not be done until about the middle of June, when most larvae will have pupated.

(Area 3) Belleville-Hardin-Centralia: Codling moth emergence continues in this region, but thus far very little evidence of egg-laying or larval hatch has been observed. Larval stings on unsprayed trees indicate the results of unfavorable weather for codling moth. Weak Bordeaux or Fermate should be used in the codling moth sprays if danger of secondary scab prevails in your orchard.

On peaches, now is the time to remove dropped fruit from your orchard to reduce secondary curculio. Do no disk yet for curculio control. Less than 10 per cent of the worms have left the dropped fruit.

(Area 4) Bedford-Lexington-S.W. Ohio: The bait trap catch of codling moth was up on May 29. With continued warm weather, egg-laying and hatch will increase rapidly, so adequate spray protection is necessary.

Oriental fruit moth shows little activity at Bedford, but there is an increase in number of wilted twigs at Lexington. Curculio is still active, indicating the need for continued arsenical protection. Many larvae are leaving the dropped fruit at Lexington.

The last spray of 4-6-100 Bordeaux for black rot on grapes may be applied this week.

(Areas 5, 6, and 7) Quincy-Pittsfield-Feoria-Champaign-Lafayette-Northern Illinois-Indiana: Codling moth emergence is heavy throughout these areas. Sprays should be applied at seven-day intervals. Orchards with scab infections should receive weak Bordeaux or Fermate, one-half pound, if oil is included in the codling moth sprays. If oil is not used, then four pounds of wettable sulfur should be added.

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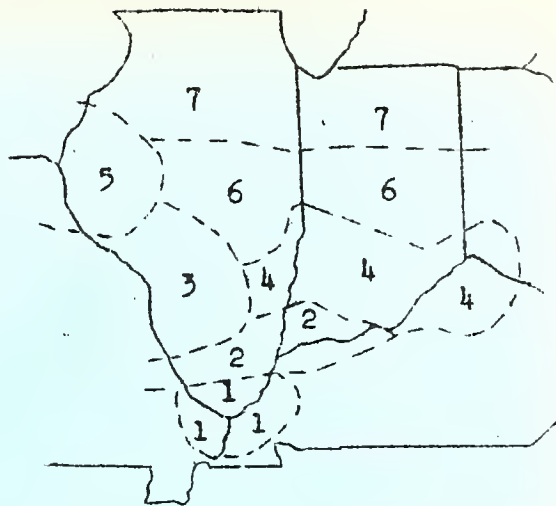
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 12--June 9-15, 1946



ANNOUNCER: Here's our weekly spray service report, compiled through the cooperation of entomologists, horticulturists and pathologists of Illinois, Indiana, Kentucky, Ohio, and the U. S. Department of Agriculture.

General: Codling moth bands should normally be applied at this time in the southern areas. If banding is planned, it should be delayed at least two weeks beyond the normal date because of the late development of codling moth.

(Area 1) Western Kentucky & Villa Ridge: On apples, judging from examination of emergence cages and bait trap catches, the first-brood codling moth attack is virtually over except for a few stragglers. Bitter rot has not been reported, but problem orchards should be watched closely. Scab control is still necessary where early infection occurred. Weak Bordeaux sprays should be adequate for preventing secondary infection.

On peaches, curculio adult numbers are low. Orchard cultivation is suggested for reducing second brood. Sulfur dusts and sprays are in order on early peaches for brown rot control.

(Area 2) Vincennes-Carbondale: The incubation period of codling moth eggs is still 14 days or longer. The rate of hatch is very slow except in a few locations. Moth emergence still continues slowly. Counts indicate that 75 to 90 percent of the overwintering generation have emerged, but 5 percent are still in the larval stage. First-brood sprays should be continued at 12- to 15-day intervals until at least July 4. Under these conditions many growers should find it possible to omit most second-brood sprays.

At Carbondale the first-brood codling moth attack is practically over. Sprays are not necessary at less than 14-day intervals. There is

little danger of early second-brood worms infesting Transparents in view of the early harvest. Thus some nicotine can be saved.

On peaches, curculio adults are still being jarred. This is probably the best time for some let-up of arsenical applications. Remember the arsenical corrective sprays and dusts. Cultivation for reducing the second brood could be started now to get the soil in good shape, but for maximum control disking should be delayed another two weeks. Brown rot sprays or dusts on early varieties should be in order.

(Area 3) Belleville-Hardin-Centralia: Codling moth emergence still continues, and spray protection is still necessary at 10-day intervals at least. Weak Bordeaux should be effective against secondary scab.

After June 10 it will probably be too late for remaining drops from the peach orchard for curculio control. Disking for second-brood reduction is not advised this early. Growers should plan a let-up of arsenical applications soon, although some adult curculio are still active.

(Area 4) Bedford-Lexington-S. W. Ohio: There has been an increase in codling moth egg hatch since June 2. The peak of first-brood infestation is probably still to occur if warm weather continues. A few curculio adults are still active on peaches. Arsenical injury is showing at Lexington, and spraying or dusting with lime should help. At Bedford zinc sulfate is suggested if bacterial spot appears. This is the last opportunity to spray grapes for black rot.

(Areas 5, 6, and 7) Quincy-Pittsfield, Peoria-Champaign-Lafayette, Northern Illinois-Indiana: Recent warm weather greatly increased codling moth egg-laying. Now is the time to give the maximum spray protection. Weak Bordeaux is suggested for secondary scab protection if oil is being used. If the use of oil is not planned, then mild sulfur, 4 pounds to 100 gallons, may be added to the codling moth sprays.

That concludes this week's spray service report, presented through the cooperation of fruit growers, federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell, University of Illinois Department of Horticulture.

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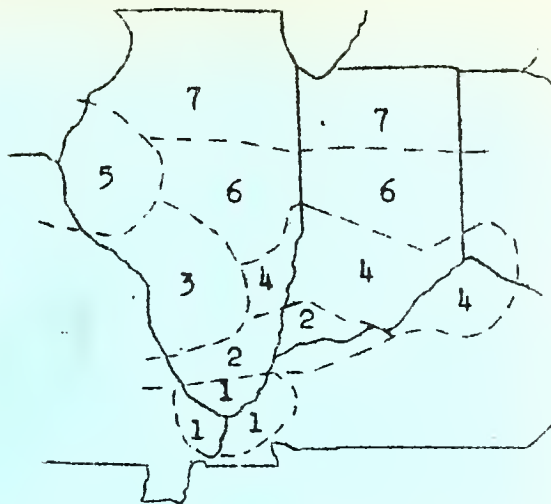
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 13--June 16-22, 1946



ANNOUNCER: Here's our weekly spray service report, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

General: Do not forget the post-harvest sprays on cherries for leaf spot control. A 4-6-100 Bordeaux is recommended as soon as the fruit has been harvested.

(Area 1) Western Kentucky & Villa Ridge: A slight increase has occurred this past week in bait trap catches of codling moths. These may be either late first-brood or early second-brood moths. In any case adequate protection should be continued between broods. Bordeaux sprays should be applied for bitter rot in problem orchards.

Curculio are now in the pupal stage, and thus cultivation of the peach orchard should be done now to reduce the second brood. Brown rot control with sulfur dusts or sprays at five- to seven-day intervals is essential on all early-ripening plums and peaches. (See Carbondale-Vincennes area for information on mite infestation.)

(Area 2) Carbondale-Vincennes: At Vincennes codling moth larval attack during the coming week will be the heaviest experienced this season. This hatch should taper off after June 22 but will continue into July and will overlap the early second-brood attack from southern Indiana. Most growers who have been spraying at two-week intervals can now shorten this interval profitably to 10 days. The European red mite was found in numbers ranging from one to 19 per 100 leaves in seven of 13 orchards sampled June 6 and 7 on a line between Vincennes, Ind., and Jackson, Tenn. The



common red spider has also appeared in this same region. Severe outbreaks of both pests are expected, particularly in the Henderson, Ky., and Vincennes sections where DDT was used last season.

Codling moth emergence has practically stopped at Carbondale. A small increase in entrances last week, however, indicates that some protection is necessary on late varieties.

On peaches adult curculios are still as numerous as last week and are more prevalent than last year at this time. Most curculio larvae have entered the ground. Disking in the next two weeks will help to reduce the second-brood attack. Second-brood Oriental fruit moth larvae are now entering twigs, but no special treatment is suggested on Elbertas yet.

(Area 3) Belleville-Hardin-Centralia: Cage emergence of codling moths has practically stopped. Growers should watch closely for new entries and keep adequate protection on the fruit.

On peaches dropped fruit contains very few curculio larvae, as most of them have entered the ground. Disking during the next two or three weeks will be valuable in reducing the second-brood attack.

(Area 4) Bedford-Lexington-S. W. Ohio: The peak of first-brood codling moth attack will occur this week, and the earliest worms to hatch this season will begin to leave the apples. Growers are warned to protect fruit against these late worms. Probably 85 percent or more of the first-brood moths have emerged.

On peaches curculio adults are scarce and larvae are still leaving dropped fruit.

(Area 5, 6 & 7) Quincy-Pittsfield; Peoria-Champaign-Lafayette; Northern Illinois-Indiana: Weather has been ideal for codling moth development. First-brood larvae in unsprayed orchards run about 18 per 100 apples in the Quincy region. This has all occurred during the past week. Egg-laying still continues but is tapering off this week. At Rock Island a heavy emergence of moths occurred daily from June 4 to 8. Growers are warned to provide adequate protection against first-brood infestation.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois

No. 14--June 23-29, 1946



ANNOUNCER: Here's our weekly spray service report, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

General: Treated bands should be applied to apple trees as soon as possible in order to collect mature first-brood codling moth larvae. Peach orchards should be cultivated now to reduce pupae of the curculio.

(Area 1) Western Kentucky-Villa Ridge: Transparent apple and Red Bird peach harvests are practically over in western Kentucky. A slight pickup in trap catches of moths in the Paducah section may indicate start of first-generation moth emergence. No apple sprays are needed now.

At Princeton, Ky., the first new adult curculio emerged June 19, but no heavy emergence is expected until after the next rain. Early peaches coming to market are unusually wormy. This looks like a year in which most growers should put on the month-before-harvest lead spray. Second-brood Oriental fruit moth larvae are still entering twigs in small numbers in the Paducah section. Injury is still lighter than normal for this time of year. Sulphur applications for brown rot control are needed on early varieties of peaches and plums.

(Area 2) Carbondale-Vincennes: At Vincennes, 25 percent of the codling moth spring brood emergence occurred during the past week. It is estimated that 99 percent of the emergence is complete. All eggs laid before June 13 have hatched, the incubation period being between five and six days.

Red mites were present in each of nine orchards examined between Vincennes and the Indiana-Michigan line on June 13-14. The largest

populations were in the Covington and Bristol areas--no red spiders were found north of Vincennes. Red mites are now increasing rapidly at Vincennes.

At Carbondale first-brood moth emergence is complete in cages, and orchards are showing some new hatch. Early entries show mature worms leaving the apple, and some pupae have been found. Thus some second-brood moths should appear within the next week or 10 days if favorable weather continues. Red mites have not yet appeared.

Throughout this area rosy aphids are disappearing and the green apple aphid are increasing in numbers. Natural enemies should control these aphids, although some growers are planning nicotine sprays.

On peaches, curculio adults have practically disappeared since last week. Most of the larvae which have left the dropped fruit have pupated. Cultivation will help to reduce the second brood.

Red spiders are serious on raspberries in Union county, Ill. Summer oil, one gallon to 100 gallons of water, is recommended.

(Area 3) Belleville-Hardin-Centralia: First-brood moth emergence has been scattered during the past week. Growers should watch for new entries and determine their sprays on the basis of the amount of protection needed to prevent entry. Second-brood moths should appear in this area by July 4.

Curculio adults are scarce for the first time this season. Larvae which have left the dropped fruit are pupating and thus cultivating should be done now in order to help reduce the second brood.

(Area 4) Bedford-Lexington-S. W. Ohio: Codling moth hatch has been heavy during the past week. Bait trap catches are low, indicating that spring-brood emergence has about ended. Watch for bitter rot in problem blocks. At Lexington, moth emergence continued fairly heavy during the past week, and spray coverage should be maintained.

On peaches, second-brood Oriental fruit moth began hatching June 18. This insect promises to be serious during and after this hatch.

On strawberries, the leafroller is abundant, but the crown borer has been light.

On grapes, leafhoppers or grapeberry moths have not appeared in numbers.

Post-harvest sprays for cherry leaf spot control are badly needed in eastern Kentucky.

(Area 5, 6 & 7) Quincy-Pittsfield; Peoria-Champaign-Lafayette; Northern Illinois-Indiana: Throughout central and northern Illinois and Indiana first-brood codling moth emergence continues on a small scale. Unsprayed orchards show 50 percent entries from the first-brood attack of the past three weeks. Mature larvae are leaving the fruit now. Most growers are waiting for second-brood sprays, which will be needed within two or three weeks.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiments Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

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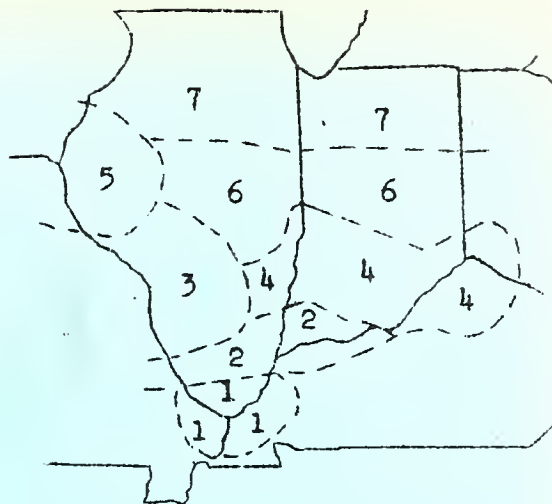
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 15--July 1-6, 1946



ANNOUNCER: Here's our weekly spray service report, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

General: L. F. Steiner notes that in the Vincennes area the European red mite was appearing at the rate of 1,000 per 100 leaves during the past week. In general the heaviest infestations have been found on the Red Delicious, Stayman and Winesap varieties. S. C. Chandler has found no evidence of red mites in Illinois to this date (June 27).

(Area 1) Western Kentucky-Villa Ridge: Codling moth emergence started in second-brood cage at Princeton on June 24. Also, a slight increase in trap catches started June 23. Traps at Fulton and Paducah have not yet shown this increase. Second-brood larvae should start hatching in the Paducah section by July 1. Apple orchards in western Kentucky should be covered by that time or as quickly as possible after this date.

No bitter rot has been seen to date; however, problem orchards should be sprayed with Bordeaux at 10-day to two-week intervals until at least three applications have been made.

On peaches, second-brood curculio adults have been emerging since June 18 in cages. Emergence increased with a 1/4-inch rain June 25. Increased emergence can be expected with additional rainfall. Because of arsenical injury, growers are warned to use a minimum of arsenical applications in keeping with good control.

Oriental fruit moth is tapering off in the Paducah area, while in Henderson freshly wilted twigs were plentiful June 24.

(Area 2) Vincennes-Carbondale: At Vincennes, codling moths for the second brood should begin emerging by July 1, but in most orchards their numbers will be small and no noticeable increase in the present rate of larval hatch is likely to occur before mid-July or later. Most growers should be able to obtain satisfactory control by applying sprays at three-week intervals until early August. The between-brood spray interval should not exceed three weeks.

At Carbondale, codling moth hatch is low. Sprays at two-week intervals should be sufficient for protection. The second-brood Oriental fruit moth is tapering off. Most plum curculio larvae have pupated. There is little evidence of adult emergence, but jarring shows a slight increase of adults in the orchard over last week. Disking the soil is one way of reducing second-brood curculio. Do it now. Hot, dry weather will retard curculio adult emergence. With the first good rain, emergence should increase.

(Area 3) Belleville-Hardin-Centralia: Codling moth activity is very low. A between-brood letup in spraying is suggested--not to exceed a two-week interval.

Curculio are mostly in the pupal stage. Disking now will help to reduce second-brood adults.

(Area 4) Bedford-Lexington-S. W. Ohio: At Lexington, moth emergence is over, although some hatching of larvae continues. Spray protection at least at two-week intervals is suggested until second-brood larvae appear numerous. On peaches, a few curculio larvae are still leaving drops, indicating that most of the population is close to or in the pupal stage. Disking in the peach orchard now is a possibility for reducing second brood. Oriental fruit moth second-brood larvae are attacking succulent peach twigs now.

(Area 5, 6 and 7) Quincy-Pittsfield; Peoria-Champaign-Lafayette; North-
Illinois-Indiana: First-brood larvae are still hatching even though the peak hatch occurred about two weeks ago. Most orchards can get by with protection at two-week intervals until second-brood larvae start to hatch. Mild fungicides may still be used in orchards having live scab.

Grapes in the Nauvoo area should receive leafhopper sprays. DDT is suggested. The grape berry moth shows evidence of a severe infestation.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the Department of horticulture at the University of Illinois.

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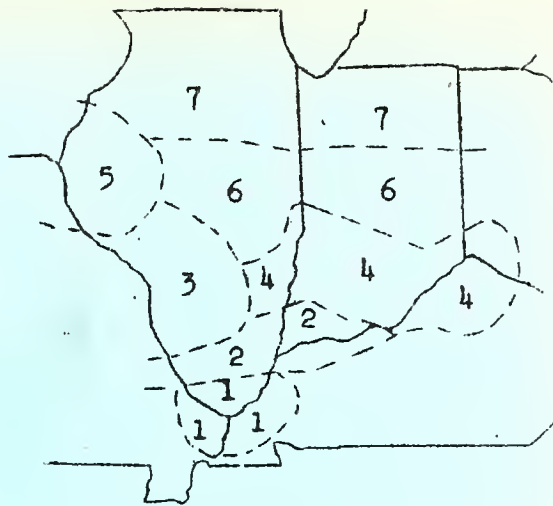
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University of Illinois College of Agriculture and the United States
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Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 16--July 7-13, 1946



ANNOUNCER: Here's our weekly spray service report, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

(Area 1) Western Kentucky-Villa Ridge: There is a general increase in bait trap catches of codling moths, indicating that second-brood hatch should start any time. Growers should apply a spray as soon as possible for protection.

Bitter rot has not appeared, as yet, but problem blocks should be watched.

On peaches, light rains have increased adult curculio emergence, but to date none of these have shown egg development. Growers are urged to do some jarring to determine their own conditions because of the differences between orchards. Many orchards in the Henderson and Paducah section will need a second-brood curculio dust or spray, but they are encouraged to time this so as to get maximum benefit with the minimum amount of arsenate applied. Growers are urged to apply pre-harvest sulfur dusts or sprays as a precaution against brown rot.

(Area 2) Vincennes-Carbondale: At Vincennes, the second-brood codling moth hatch should start not later than July 5 and should slowly increase to a peak during the week of July 14. A separate and probably larger second-brood hatch should occur during the first week of August, if normal weather prevails. Some first-brood worms are still entering the apples. In general, the population is about the same as at this

date in 1945. Some growers will need three or four additional sprays for control. Others having less than five worms per 1,000 apples at this time may get by with only one or two more applications.

Both red mites and red spiders are on the increase in DDT-sprayed orchards. Growers intending to use dinitro compounds, oil, or other materials for the control of these pests should, in most instances, make the first of two applications in the very near future and the second in ten days.

At Carbondale, early second-brood hatch should start by July 8; however, in most commercial orchards, control has been such that early second-brood worms will be scarce. Growers should keep a close check on their own orchard. Probably growers who have not sprayed for two weeks or more should apply a spray now for a safety measure. There is still time for banding, in as much as only about one-fifth of the first-brood larvae have left the apples.

On peaches, there has been a sharp rise in adult curculio jarred this last week. Lead arsenate applications should go on at once.

Oriental fruit moth in both the Carbondale and Vincennes areas appears to be abundant. At Carbondale, the third-brood larvae should appear by July 10. Growers equipped for spraying should include three to four pounds Black Leaf 155 to 100 gallons with their sulfur.

(Area 3 and 4) Belleville-Hardin-Centralia; Bedford-Lexington-S.W. Ohio: Bait trap catches increased slightly on July 1. A spray for control of the first second-brood larvae should begin by July 10-15 in orchards where early first-brood infestation occurred. Oriental fruit moth larvae are reduced some since June 20-25. This brood has been severe in Indiana, and early peach varieties such as Hale Haven will carry a greater infestation than last year. Adult curculios are

emerging now, thus poison applications are suggested. Grape leafhoppers are appearing, and a spray within ten days is suggested.

(Area 5, 6, and 7) Quincy-Pittsfield; Peoria-Champaign-Lafayette; Northern Illinois-Indiana: The first moths for second-brood worms should emerge by July 8-12 in the Quincy area. Most growers in this area should plan the first second-brood spray on or near July 15. Growers north of the Quincy-Pittsfield area should delay their sprays in accordance with difference in latitude.

The second-brood grape berry moth is expected to start by August 1 in the Nauvoo area. DDT or lead arsenate sprays should be applied at that time.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

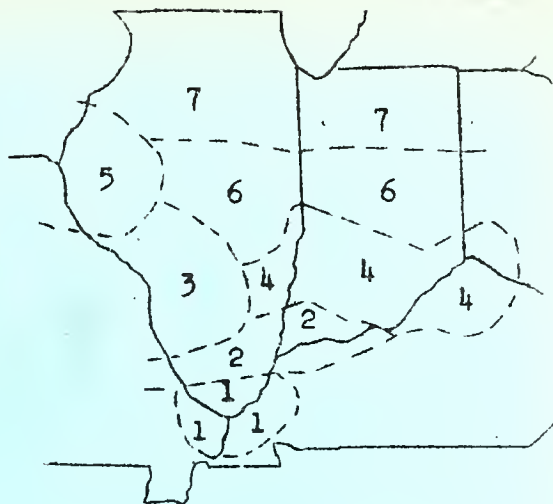
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 17--July 14-20, 1946



ANNOUNCER: And now, the weekly spray service report, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

General: Bitter rot (week-old infection) was observed in southern Illinois July 8. A 4-6-100 Bordeaux applied at least three times at 10-day intervals is recommended in blocks which show this disease. Watch out for trees which become infected each year. Removing such trees from the orchard, pruning out old wounds, broken limbs, etc., are methods of eradicating bitter rot.

Do not forget the sulfur applications on peaches for brown rot control.

(Area 1) Western Kentucky and Villa Ridge: A second-brood hatch of codling moth larvae of moderate intensity was under way on July 9. Immediate coverage is strongly advised in all apple orchards that have not been sprayed for two weeks. Bitter rot has not been reported to date. Watch out for infection in areas where it has occurred in the past. On such areas, precautionary sprays of Bordeaux should be continued until three applications have been made. On peaches, egg development was observed July 10 in curculio that emerged June 28. This indicates that there will be a true second brood. Arsenical applications a month before harvest are recommended. Brown rot is fairly common on ripening peaches, as well as on Hale and some Elbertas following insect injury. Sulfur dusts or sprays at regular intervals are recommended up to harvest.

(Area 2) Vincennes and Carbondale: Codling moth adult trap catches have fallen off, indicating that the first peak of adult first-brood activity

s apparently over. A second and larger peak is expected in late July. Protection should be given at not longer than three-week intervals until early August.

Both European red mite and the common red spider are now increasing rapidly except where special treatments for their control have been applied. In one local orchard there was a 900 percent increase between June 24 and July 8 to an average of 1,350 per 100 leaves. Mites are now present in all local orchards under observation.

At Carbondale, second-brood entries have started; however, in well-sprayed orchards they are very scarce or missing. No great increase is expected this coming week. No mites have yet appeared. Week-old bitter-rot-infected apples were found, indicating that this disease is under way, at least in some orchards in this area.

On peaches a marked increase in curculio adults has occurred. Arsenical applications are necessary. Third-brood Oriental fruit moth larvae should be entering either twigs or fruit by this week. The fruit appears to be maturing earlier this year than normal, allowing Oriental moth entry. Do not forget sulfur for brown rot.

(Areas 3 and 4) Belleville-Hardin-Centralia; Bedford-Lexington-Southwestern Ohio: The first larvae of the second-brood codling moth were expected by July 12, a peak hatch occurring by July 20. Spray protection is necessary at this time. No bitter rot has been reported.

On peaches, large numbers of curculio adults are emerging for second-brood infestation. Arsenical applications are necessary. A heavy third brood of Oriental fruit moth is anticipated. Brown rot is prevalent in many home plantings. Sulfur at regular intervals is recommended.

A spray for grape leafhoppers should be applied now if one hasn't been applied within the past two weeks.

(Areas 5, 6 and 7) Quincy-Pittsfield; Peoria-Champaign-Lafayette-Northern Illinois-Indiana: Second-brood codling moth larvae should first appear this week in the Quincy-Pittsfield area. Spraying at this time is recommended.

Red mites are prevalent in DDT-sprayed blocks at Urbana. A grape leafhopper egg hatch is well under way at Urbana this week. Bordeaux with either nicotine or DDT is suggested.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

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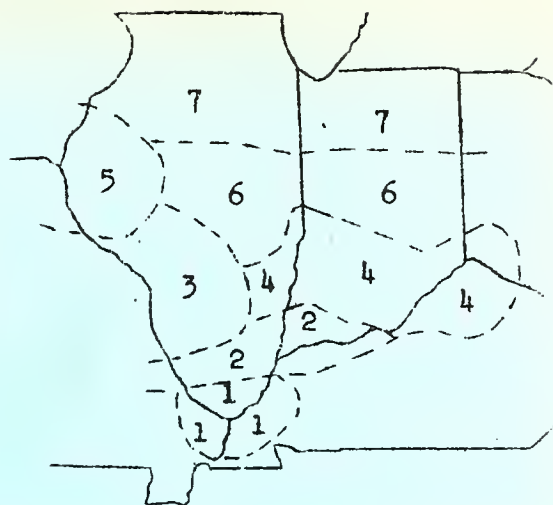
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois.

No. 18--July 21-27, 1946



ANNOUNCER: And now, the weekly spray service report, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

General: Red spiders are appearing in almost all DDT-sprayed orchards. Red mite is prevalent in the Indiana-Kentucky areas. As yet no definite recommendation has been made for controlling these pests in the orchard. Oil-DDT sprays are considered helpful. DN-111 looks good in experimental tests but may cause injury when used at temperatures of 90° F. or above. Either of these sprays is a possibility for relief in cases of severe infestations.

(Area 1) Western Kentucky and Villa Ridge: Second-brood codling moth activity is increasing. Most western and central Kentucky orchards are showing entries sufficient to justify two or three sprays at about two-week intervals. Red mites are appearing in many orchards. Growers should make frequent observations for bronzing, especially where DDT is being used, and should be prepared to apply two sprays 10 days apart, with two quarts of summer oil and 1/2 pound actual DDT plus 1/4 pound/soybean flour per 100 gallons of water in each application.

Bitter rot has appeared, indicating the need for precautionary measures in problem blocks.

On peaches, curculio adults are abundant and appear to be ready for egg-laying. A preharvest arsenical application will reduce these adults. Peach brown rot is common now on ripening fruit, and preharvest sulfur dusts or sprays are suggested.

(Area 2) Vincennes and Carbondale: At Vincennes, codling moth catches have shown a slight increase this week and are now higher than at any other time since mid-June. The peak second-brood hatch is not expected to occur before August 1 or later.

Red spiders and mites are still increasing rapidly in DDT-sprayed orchards.

At Carbondale, second-brood codling moth larvae are appearing. Sprays at two-week intervals are suggested through this period. Do not neglect late apples when peach harvest starts. A spray during this week should help, since some peach harvesting may start by July 29.

Red spiders are appearing in small numbers in most DDT-sprayed orchards. The bitter rot season is here, infection showing in some problem blocks. Therefore, precautionary measures should be used.

On peaches, curculio adults are abundant. Oriental fruit moth larvae are entering new twig growth. Sulfur-oil dusts or Black Leaf 155 sprays are recommended. Brown rot is appearing even in Elberta, and sulfur dusts or sprays should be used.

(Areas 3 and 4) Belleville-Hardin-Centralia; Bedford-Lexington-S. W. Ohio: Codling moth catches at Bedford are steadily increasing. A fairly heavy second-brood hatch is expected throughout these areas this week. Sprays at 10-day intervals are suggested. Red spiders are now appearing in small numbers in DDT blocks.

On peaches, curculio are moderately abundant, there being less than in the southern areas. Oriental fruit moth third brood has begun at Bedford.

(Areas 5, 6 and 7) Quincy-Pittsfield; Peoria-Champaign-Lafayette; Northern Illinois-Indiana: A number of fresh entrances of second-brood codling moth larvae have appeared in Areas 5 and 6. A peak hatch is expected by August 1. Sprays at 10-day intervals are recommended. Red spiders are present in all DDT-sprayed orchards, particularly on the lower leaves of the trees.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

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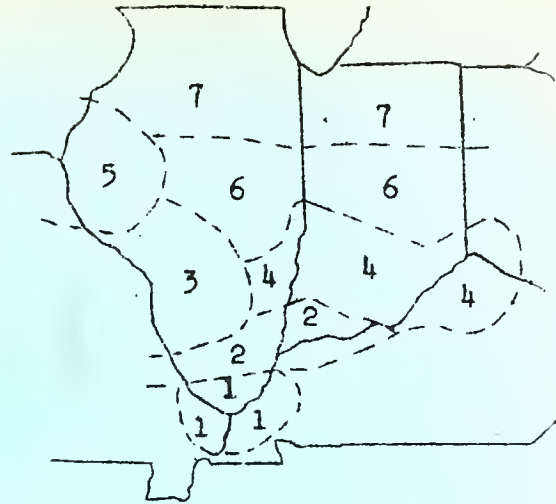
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University of Illinois College of Agriculture and the United States
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois

No. 19--July 28-August 3, 1946



ANNOUNCER: Here's our weekly spray service report, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

General: In the last mite survey completed July 19 by L. F. Steiner, Vincennes, Indiana, the European red mite was present in 19 of 26 Indiana, Illinois, Kentucky and Tennessee orchards examined. It was absent from five orchards near Mayfield, Paducah and Sturgis, Kentucky; one at Omaha, Illinois; and one at Owensville, Indiana. Infestations ranged up to 6,300 mites per 100 leaves.

The common red spider was present in 23 of 26 orchards examined. Both species are increasing rapidly except where special miticide sprays are being applied. Growers using dinitro materials are reporting foliage injury where applications overlap. In the use of this type of spray, growers should complete the application on both sides of the tree or row before any of that on the side sprayed first has time to dry.

(Area 1) Western Kentucky and Villa Ridge: The codling moth attack continues, and protection is advised in orchards which were not adequately sprayed during the first-brood period. Red spider and red mites are becoming serious, and miticide sprays are suggested.

Curculio is serious in some ripening peach orchards. The weather has been hot and humid, encouraging brown rot infection. Sulfur sprays or dusts are suggested at five- to seven-day intervals until harvest.

(Area 2) Vincennes and Carbondale: At Vincennes, codling moth activity reached a small peak July 18 and 20. The present rate of hatch is increasing and will be heavy for the next ten days in orchards having inadequate first-brood control. This hatch should be the main second-brood attack in most orchards.

At Carbondale, codling larvae continue to hatch to a moderate degree. Spraying at two-week intervals is recommended. Red spiders do not appear serious, probably because of recent heavy rains.

On peaches, curculio adults are still active but are fewer in number than last week. Orchards receiving late poisons look good. Rains have caused much fruit-cracking, making the fruit more susceptible to brown rot. For this reason sulfur sprays or dusts should be thorough.

(Areas 3 and 4) Belleville-Hardin-Centralia; Bedford-Lexington-S. W. Ohio: At Bedford, bait trap catches indicate that codling moth flight is greater than at any other time this season. A heavy hatch is expected by July 30. At Lexington, there has been little increase in second-brood activity.

On peaches, third-brood Oriental moth attack is very heavy and prolonged in Area 4. Fourth-brood larvae are expected to enter peaches by August 6. Conditions are very favorable for brown rot. Sulfur sprays or dusts are recommended at five- to seven-day intervals until harvest.

(Areas 5, 6, & 7) Quincy-Pittsfield; Peoria-Champaign-Lafayette; Northern Illinois-Indiana: A heavy codling moth emergence and egg hatch is expected this week. First-brood larvae collected in bands were about 75 percent in the pupal stage, many moths emerging July 23 at Quincy.

At Nauvoo, second-brood grape berry moths were emerging in cages July 24.

At Urbana, a heavy hatch of codling moth is expected by August 1. Red mite is serious on all varieties in DDT-sprayed blocks.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 20--August 4-10, 1946



ANNOUNCER: Here's our weekly spray service report, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

General: The nicotine supply is still short. However, growers seem to be getting sufficient control of second-brood codling moth with DDT and half-strength DDT-nicotine bentonite combinations to make it necessary to spray much less than usual next month. No one knows how late DDT applications can be continued without encountering a residue problem. Use nicotine if you have it, or a combination 1/2-strength nicotine-DDT, if your nicotine supply is short. If you do not have nicotine, 1/2-strength DDT should be adequate except where the codling moth infestation is serious. The alternative is to use a lead arsenate schedule and prepare to wash.

Be prepared to apply hormone sprays for preventing preharvest drop.

(Area 1) Western Kentucky and Villa Ridge: At Villa Ridge, Elberta peach harvest started July 26. Curculio is severe in the Mounds-Villa Ridge area, but less so at Metropolis, where heavy dusts were applied. Oriental fruit moth is past the peak third-brood larvae attack.

(Area 2) Vincennes and Carbondale: At Vincennes, codling moth catches are remaining comparatively high, although they are well below normal for this time of the season. The peak of the second-brood hatch is believed to be occurring at present and should continue at the current level for another week or longer. Mites and red spiders are increasing steadily except where growers have used oil or dinitro sprays.

At Carbondale, a moderate codling moth hatch continues, and spray protection at two-week intervals should be adequate. Mites or red

spiders have not appeared serious in orchards examined, possibly because of the recent use of oil in DDT-sprayed areas.

On peaches, a recent count by S. C. Chandler on orchard-run fruit showed a 9.2 percent infestation of curculio, 5.1 percent Oriental fruit moth, and 18 percent catfacing. The third-brood Oriental fruit moth larvae are still entering the fruit. Harvest of Elberta peaches started July 29.

(Area 3) Belleville-Hardin-Centralia: A steady hatch of codling moth is occurring in this area. Spraying at two-week intervals should be adequate. Bitter rot has appeared in Calhoun county, indicating that problem orchards in this area should be watched closely.

Red spiders or mites had not appeared abundantly up to July 29.

Brown rot control measures are of utmost importance now on peaches. Sulfur applications at weekly intervals to harvest are recommended.

(Area 4) Bedford-Lexington-S.W. Ohio: Second-brood codling moth hatch continues to be heavy, although bait trap catches of adult moths have decreased materially. Thus a decrease of new entries is expected shortly. Sprays at 10-day to two-week intervals should be adequate protection.

Oriental fruit moth entry this past week has been the heaviest of the season.

Grasshopper infestations in orchards may be reduced by poison bran baits. Arsenical sprays do not control grasshoppers.

(Areas 5, 6 & 7) Quincy-Pittsfield; Peoria-Champaign-Lafayette; Northern Illinois-Indiana: Codling moth egg hatch should start tapering off this week. Sprays at two-week intervals should be adequate except in heavily infested orchards. Western and northern Illinois have not reported serious mite or spider infestations. At Urbana, European red mite and the common red spider are serious in DDT-sprayed blocks.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

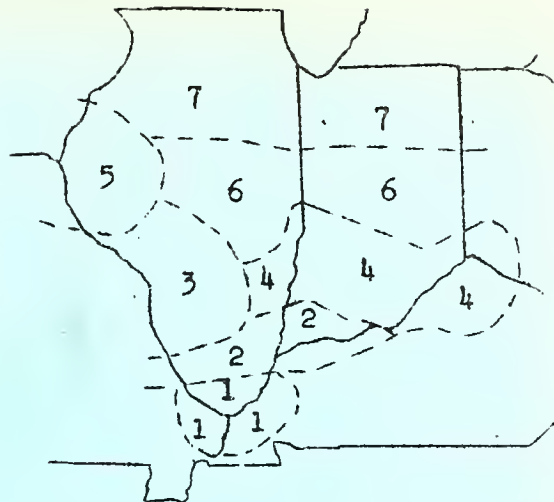
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 21--August 11-17, 1946



ANNOUNCER: Here's our weekly spray service report, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

General: The nicotine supply is still short. Continue stretch-nicotine by using half-strength with half-strength DDT where necessary. Watch peaches for brown rot and use sulfur as needed, especially where curculio or Oriental fruit moth is bad.

(Area 1) Western Kentucky and Villa Ridge: The Elberta harvest is nearing a close in western Kentucky. Curculio varies from light to heavy between orchards; some growers are obtaining good control and others poor.

Oriental fruit moth infestation is moderate to heavy except where DDT has been used. Parasites are plentiful.

Codling moth activity continues but is on the decline.

Red mites and red spiders are increasing, especially where DDT has been used.

(Area 2) Vincennes and Carbondale: At Vincennes, second-brood codling moth hatch is still continuing at a moderate rate. Continuance of hatch is expected for at least another week where control of first-brood was inadequate. Red-banded leaf roller larvae are causing considerable damage in some orchards. DDT apparently is not giving control.

European red mites are increasing in some situations, but are being replaced by rapidly increasing red spider infestations.

At Carbondale, enough codling moth hatch is occurring to warrant another spray after peach harvest. Orchards examined show little increase in mites and spiders.

On peaches, the big problem is brown rot control. Sulfur applications are recommended.

(Area 3) Belleville-Hardin-Centralia: A light hatch of codling moth continues. The peak of second-brood hatch is over, and spraying at two-week intervals should be adequate. Peach harvest should be under way soon. Growers are warned to watch brown rot closely, especially where curculio damage is heavy.

(Area 4) Bedford-Lexington-S. W. Ohio: Codling moth catches in bait traps are twice as high as at any time during the first-brood period. A heavy hatch is under way. Where nicotine programs are used without DDT, applications should be made at weekly intervals. Mites are increasing at an alarming rate.

On peaches, the Oriental fruit moth attack on twigs lessened slightly during the past week. Fruit injury is not prevalent at Lexington. The peak Elberta harvest will probably occur by August 12, 68 days earlier than normal. Additional protection against brown rot is recommended. Concord grapes are turning fast.

(Areas 5, 6 & 7) Quincy-Pittsfield; Peoria-Champaign-Lafayette; Northern Illinois-Indiana: The peak of second-brood codling moth attack is over, a light hatch continuing in Areas 5 and 6. Area 7 should prepare for a peak hatch within a week or so.

European red mite attack is still serious at Urbana and is showing up in the Quincy area. There is still no report from northern Indiana or Illinois.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

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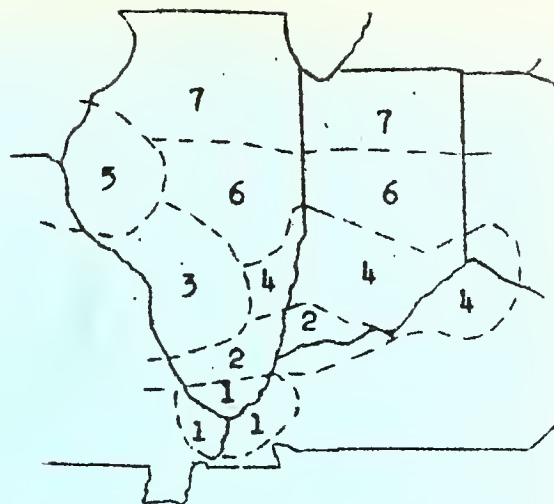
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 22--August 18-24, 1946



ANNOUNCER: Here's our weekly spray service report, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

General: It is important to prepare now for preharvest hormone sprays.

(Area 1) Western Kentucky and Villa Ridge: No report received.

(Area 2) Vincennes and Carbondale: At Vincennes, codling moth catches continue at a moderately low level. The rate of hatch is still low and not much change is expected through the remainder of the month. Except in a few orchards, third-brood attack is expected to be light. What appears to be a third generation of larvae of the red-banded leaf-roller is beginning to appear at Vincennes. Moth catches in bait traps during the past 10 days have outnumbered codling moth by some 20 to 1 in at least one Vincennes orchard.

At Carbondale no increase has been observed in numbers of codling moth larvae entering fruit. Rain and cooler weather on August 13 and 14 will probably delay development.

In general the European red mite infestation from Vincennes south to Tennessee is decreasing. The same is true in most orchards north of Vincennes. Red spiders at Paducah, Ky., were going into hibernation on August 8, and hibernating forms were found at Vincennes and at Greenfield, Tenn. In most orchards south of Henderson and north of Vincennes, the red spider population seems to be diminishing. At Vincennes it is still increasing in a number of orchards, the populations

ranging up to 60 per leaf. In most orchards where mite and spider populations have built up and where no recent DDT sprays have been applied, predators have recently become abundant enough to account for much of the decrease in infestation.

At Carbondale all DDT blocks show moderate numbers of mites, but only one case of noticeable injury has been found. The problem of whether or not to use oil in DDT-nicotine sprays will have to be solved by individual growers, since no answer can be given to orchardists as a whole.

Growers may apply DN 111 during any cool period.

(Area 3) Belleville-Hardin-Centralia: Apple conditions in this area are reported to be about the same as those in the Carbondale area except that they are a little farther from harvest.

Harvest of peaches in the Salem to Farina area began Monday, August 12. At present no great numbers of Oriental fruit moth larvae are entering the fruit, although the fourth brood should begin by August 15.

(Area 4) Bedford-Lexington-S. W. Ohio: At Mitchell, Ind., bait trap catches have decreased in numbers this week. A heavy hatch is expected to continue for several days, however. Oriental fruit moth larval entrances into peaches and twigs have decreased sharply. The harvest of Elbertas is 75 per cent finished, and Gage Elbertas are ripening. Grasshoppers are reported to be feeding heavily on apple foliage. Concord grapes will be harvested next week.

At Lexington small Oriental fruit moth larvae are beginning to enter Elberta peaches. Counts show 11 per cent in the crop so far in the experiment station orchard. Counts of curculio show five per cent in Elbertas. Many of these are very small larvae which indicate the appearance of a true second brood. Some brown rot is showing up on Elbertas.

The pupulation of European red mites is still increasing, and some apple trees at Lexington show severe bronzing.

(Areas 5, 6 & 7) Quincy-Pittsfield; Peoria-Champaign-Lafayette Northern Indiana-Illinois: Most growers have finished or are finishing their second-brood codling moth sprays. It is suggested that all growers watch their orchards closely. It is possible that additional sprays will not be necessary this year except for the hormone application.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 23--August 25-31, 1946



ANNOUNCER: Here's our weekly spray service report, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

Preharvest Hormone Applications: Hormone applications to prevent premature fruit drop should now be standard practice on such apple varieties as Jonathan, Delicious, Starking, Golden Delicious, Winesap and Stayman. Some growers have reported success on Grimes Golden when applications were started three or four weeks before harvest and two or three were applied. York Imperial and Willow Twig do not respond to hormone treatment.

It is customary to delay hormone applications until apples start to drop or until they are almost ready to pick. A treatment may become effective in two days and remain effective for 10 days to three weeks, depending on the variety.

Hormones should not be applied when the temperature is below 70°F., as they are not effective at low temperatures. Special applications are not always necessary, as these materials may be combined with the late codling moth sprays.

The use of hormone applications on apples is of utmost importance and should not be neglected. Fruit left on the tree a little longer has better color, size, flavor and selling qualities.

(Area 1) Western Kentucky and Villa Ridge: Bait trap catches indicate that a third-brood codling moth hatch should occur the last week of August. In general, most Kentucky apples are rather free from worms and should wind up clean if the third brood does not cause trouble. The mite populations have not changed much since last week. Bitter rot

is appearing on certain trees in some orchards. Stripping these trees is recommended, and if spread occurs a late Bordeaux spray should be applied, probably combined with a codling moth and hormone spray.

(Area 2) Vincennes and Carbondale: Third-brood codling moth hatch should be well under way by August 24, although no sharp increase in the present rate of hatch is expected. Growers should watch for fresh injuries.

A heavy third-brood hatch of red-banded leaf roller is occurring at Vincennes. Present indications are that this insect infestation has been brought about by the use of DDT, which is proving ineffective in controlling the leaf roller larvae, but is toxic to some of its parasites and predators.

Both species of mites are still present in some orchards throughout the tri-state area, but in fairly reduced numbers. Additional mite sprays will probably not be necessary.

(Areas 3, 4, 5, 6, and 7) Belleville-Hardin-Centralia; Bedford-Lexington-S. W. Ohio; Quincy-Pittsfield; Peoria-Champaign-Lafayette; Northern Illinois-Indiana: In Areas 3, 4, 5, and 6, new codling moth entries are occurring to some degree, depending on the orchard. Growers should spray accordingly. A third brood should not develop much before September 1. Mites are occurring in scattered orchards, but they are not general. In most cases it would not pay to spray for mite control at this time.

Jonathan drop is occurring in central and western Illinois orchards. Hormone applications are recommended.

Growers in Area 7 should watch for codling moth injury and spray if necessary.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois

No. 24--September 1-7, 1946



ANNOUNCER: Here's the last in this season's series of weekly spray service reports, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

(Area 1) Western Kentucky-Villa Ridge: Light to moderate third-brood codling moth attack seems to be under way throughout central, southern and western Kentucky. Some growers are applying oil-nicotine and stick-on sprays.

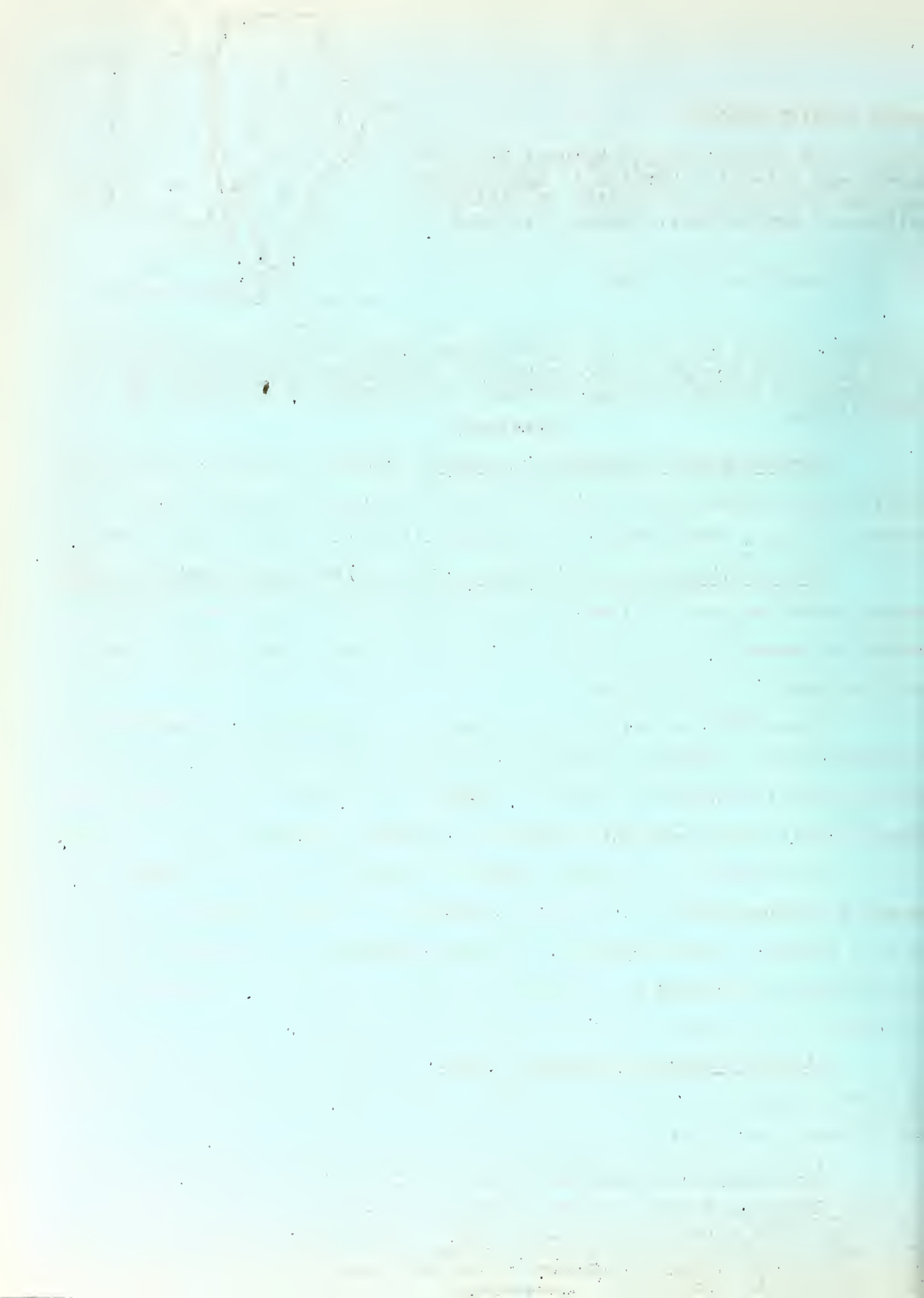
(Area 2) Vincennes and Carbondale; (Area 3) Belleville-Hardin-Centralia: Codling moth catches in Vincennes have declined to a very low level; and except in orchards where control of the second brood was poor, no further spraying should be necessary.

Since Elberta harvest, there has been a substantial increase in oriental fruit moths coming to codling moth traps in apple orchards as much as 1/2 mile from the nearest peach trees. Apples will suffer some attack from oriental fruit moth larvae this week and an increasing amount through next week.

The mite and red spider situation is about the same as a week ago. Damage, including loss of foliage, is increasing wherever infestations have been or still are moderately high. In some plantings all individuals found were European red mites; in others, all the common red spider. Usually, however, both are present, the spiders being most abundant.

(Area 4) Bedford-Lexington-S. W. Ohio: Third-brood codling moth hatch is increasing, and a nicotine application is needed. Gage Elberta harvest was finished on August 29. Jonathan harvest will begin soon.

(Areas 5, 6 & 7) Quincy-Pittsfield; Peoria-Champaign-Lafayette; Northern Illinois-Indiana: Because of cool weather, third-brood codling moth emergence has not started in the Quincy area. There are still a few entries from the last of the second brood at Champaign. Mature larvae under bands show very little pupation at Quincy. If the cool weather continues, development will probably be very slow.



Final Report for 1946. This report will complete the series of 24 weekly spray service reports for the use of fruit growers. These reports have been made possible through the cooperation of many fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. The reports have been compiled by Dwight Powell of the department of horticulture at the University of Illinois.

The following men have contributed to the success of the Spray Service Report by reporting on orchard conditions: L. F. Steiner, Bureau of Entomology and Plant Quarantine, Vincennes, Indiana; Prof. C. L. Burkholder, Prof. J. J. Davis, and Dr. G. Edw. Marshall, Indiana Agricultural Experiment Station, Purdue University, Lafayette, Indiana; Dr. W. D. Armstrong and Dr. F. O. Ritcher, Kentucky Agricultural Experiment Station, University of Kentucky, Princeton and Lexington, Kentucky; Prof. T. H. Parks, Ohio State University, Columbus, Ohio; Department of Entomology, University of Missouri, Columbia, Missouri; Jos. M. Ackles, Griggsville, Ill.; Charles S. Adkins, Jr., Metropolis, Ill.; Fred Baxter, Nauvoo, Ill.; Jim Bright, Valley City, Ill.; W. L. Casper, Cobden, Ill.; S. C. Chandler, Carbondale, Ill.; Frank Chatten, Quincy, Ill.; Dave Dell, Grafton, Ill.; Curt E. Eckert, Belleville, Ill.; L. A. Floyd, Greenville, Ill.; Hugh Hale, Omaha, Ill.; Harry Hatcher, Roodhouse, Ill.; Fred Hawkins, Texico, Ill.; Vilas Hensel, Princeton, Ill.; C. T. Jeffries, Dix, Ill.; Bernard Y. King, Moline, Ill.; John F. Leahr, Griggsville, Ill.; Roy J. Newman, Martinsville, Ill.; C. E. Percels, Farina, Ill.; A. Lee Pray, LeRoy, Ill.; H. O. Rice, Champaign, Ill.; Chris Ringhausen, Jerseyville, Ill.; Roy Schwartz, Cobden, Ill.; C. E. Walkington, Tunnel Hill, Ill., and staffs of the Illinois Natural History Survey and the University of Illinois Department of Horticulture, Urbana, Illinois.

Because of mailing regulations, the 1947 spray service reports cannot be sent automatically to recipients of the 1946 reports. Therefore, a letter will be sent in April 1947 to all persons on the 1946 mailing list asking if they wish to receive the 1947 reports. Any inquiries and suggestions concerning the reports should be addressed to R. S. Beeler, Assistant Extension Editor, University of Illinois College of Agriculture, Urbana, Illinois.

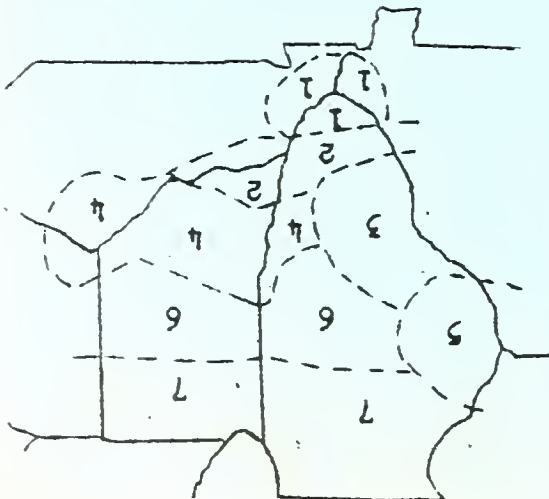
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

PRAY SERVICE REPORT

Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois



SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 24--September 1-7, 1946



ANNOUNCER: Here's the last in this season's series of weekly spray service reports, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio and the U. S. Department of Agriculture.

(Area 1) Western Kentucky-Villa Ridge: Light to moderate third-brood codling moth attack seems to be under way throughout central, southern and western Kentucky. Some growers are applying oil-nicotine and stick-on sprays.

(Area 2) Vincennes and Carbondale; (Area 3) Belleville-Hardin-Centralia: Codling moth catches in Vincennes have declined to a very low level; and except in orchards where control of the second brood was poor, no further spraying should be necessary.

Since Elberta harvest, there has been a substantial increase in oriental fruit moths coming to codling moth traps in apple orchards as much as 1/2 mile from the nearest peach trees. Apples will suffer some attack from oriental fruit moth larvae this week and an increasing amount through next week.

The mite and red spider situation is about the same as a week ago. Damage, including loss of foliage, is increasing wherever infestations have been or still are moderately high. In some plantings all individuals found were European red mites; in others, all the common red spider. Usually, however, both are present, the spiders being most abundant.

(Area 4) Bedford-Lexington-S. W. Ohio: Third-brood codling moth hatch is increasing, and a nicotine application is needed. Gage Elberta harvest was finished on August 29. Jonathan harvest will begin soon.

(Areas 5, 6 & 7) Quincy-Pittsfield; Peoria-Champaign-Lafayette; Northern Illinois-Indiana: Because of cool weather, third-brood codling moth emergence has not started in the Quincy area. There are still a few entries from the last of the second brood at Champaign. Mature larvae under bands show very little pupation at Quincy. If the cool weather continues, development will probably be very slow.

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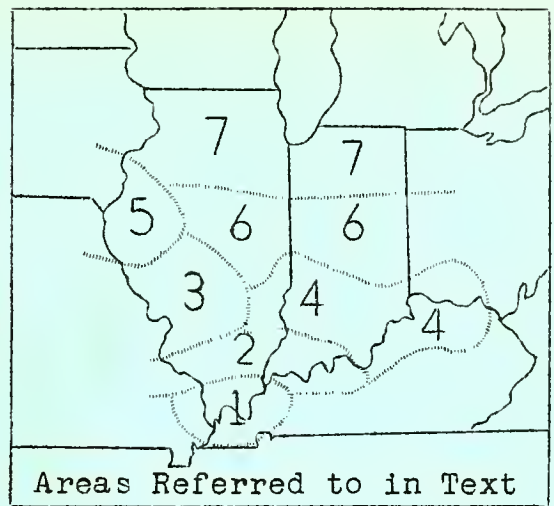
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 1--March 30-April 5, 1947



ANNOUNCER: Here's the first of our weekly spray service reports. They are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station _____. We will bring them to you each _____ at this time throughout the spraying season, up into September.

General. In the past two years fruit growers had by this time started their season's spray program. This year they are "champin' at the bit"--ready to go. But each day brings temperatures in the freezing range, so operations have been temporarily delayed.

Now, while you are waiting for things to pop, is a good time to recheck a few items. Reread the past two issues of your fruit growers' magazine and study the compatibility chart on insecticides and fungicides and the discussions of weather thoroughly. So far fruit prospects for this year look promising. Freeze damage to peaches and apples has been slight.

Peach buds are swelling in western Kentucky and the southern tip of Illinois, and an occasional leaf bud is breaking open. The rest of Kentucky, Illinois and Indiana can be considered close to strictly dormant.

Observations indicate a general heavy carryover of San Jose (HO-ZAY) scale. Red mite eggs are abundant in certain areas. Aphid eggs are abundant but not so plentiful as last year. This is your last chance to apply a dormant spray.

Codling moth mortality is low. Thus, if an orchard had a heavy infestation in 1946, the grower can rely on having a good carryover this year. Now is the time to spray off the bark to destroy many of the overwintering larvae as well as to prepare the trees for banding.

Red-banded leaf roller pupae (pu-pee) have a mortality of 48 percent, with 36 percent normal pupae and about 16 percent parasitized. Pupae brought into the laboratory will emerge as moths in four days at temperatures of 80° F. Present indications are that the first eggs will be hatching at about the time of the pink spray.

Apple scab perithecia (pair-ith-uh-SEE-uh) are abundant in certain orchards and, in the southern-most areas, are about ready to discharge. A ground spray is recommended in orchards where scab is considered serious.

Brown rot carryover is high. In blocks of Red Bird where blossom blight has been high in the past, planning a lime sulfur spray in the delayed pink bud stage is suggested. It should be six quarts of lime sulfur to 100 gallons of water.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

(Sectional reports are not made in this issue because of the delayed season.)

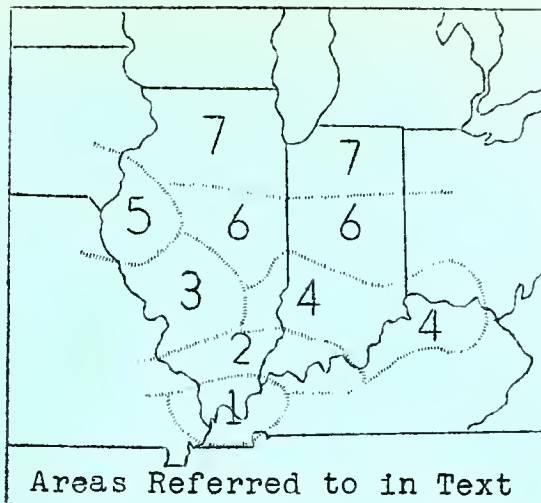
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 2--April 6-12, 1947



ANNOUNCER: Here's the second of our weekly spray service reports. They are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station _____.

General - Cool weather has delayed development all along the line.

Growers who were not able to obtain P.D.B. (para-dichloro-benzene) last fall for peach borers may want to make a spring application. P.D.B., however, will not be effective until about May, when the ground temperature will rise sufficiently for volatilization. If you wish to treat sooner, use ethylene dichloride emulsion according to the manufacturer's directions. On old trees about 1/2 pint of 20% strength ethylene dichloride is needed. Mound as with P.D.B.

Many growers are using Bordeaux emulsified-oil dormant spray. There is just one right method of mixing this spray. As the tank is filling, add the copper sulfate, then the hydrated lime and then the oil.

Dilute the oil with equal amounts of water, and stir thoroughly before adding it to the tank.

Area 1 - Western Kentucky and Villa Ridge, Illinois: Elberta peach fruit buds are showing pink. Delicious buds are approaching the prepink stage. Scab spores are mature and ready for discharge in the Princeton area. Rain in this area now should bring infection on varieties in the green-tip stage or beyond. Newly hatched aphids were found in Princeton on April 2.

Area 2 - Carbondale-Vincennes: Occasional pink petals are showing on peaches. There is still time for scale sprays, but it is probably too late for leaf curl.

Apples are in the delayed dormant stage. Growers should be applying the Bordeaux dormant for blotch control this week.

Area 3 - Belleville-Hardin-Centralia: Not much development has occurred during the last week. There is still time for dormant sprays.

Area 4 - Bedford-Lexington-S. W. Ohio: Peach buds should show some pink this week. A few buds were cracking on Red Bird April 1. Apple buds should start swelling this week.

Areas 5-7 - Quincy-Pittsfield; Peoria-Champaign-La Fayette; Northern Indiana-Illinois: The area is still strictly dormant. Ground sprays should be applied now for scab control.

That concludes today's spray service report, presented in co-operation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

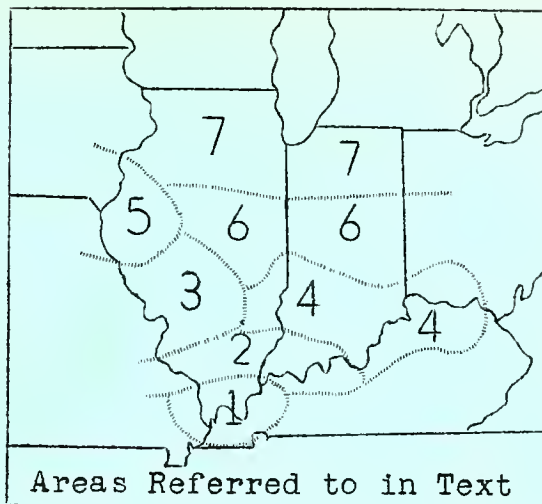
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 3--April 13-19, 1947



ANNOUNCER: Here's our weekly spray service report. They are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and station _____.

General - The early emergence of the red-banded leaf roller brings the question of whether or not to use some lead arsenate in the prebloom sprays in orchards or blocks where this insect was serious in 1946. If an orchard received DDT in 1946 and has a heavy red-banded leaf roller carryover, and if a DDT schedule is planned on this same orchard for 1947, it seems logical to use some lead in the prebloom sprays. This recommendation takes into consideration the scarcity and high cost of lead arsenate.

The second important item is a full-bloom spray of wettable sulfur on peach orchards which have had blossom blight infections in the past. In problem orchards this is an important spray.

General predictions are for cooler than normal weather with above-normal rainfall during April. Under these conditions we may have a severe scab year--so let's spray accordingly.

Area 1 - Western Kentucky and Villa Ridge, Illinois: Peach blossoms started opening April 6. Red Delicious buds will break open this week. Most growers have applied lime sulfur, 6 quarts to 100 gallons, for blossom blight on peaches. On apples prebloom scab sprays should start at once.

Area 2 - Carbondale-Vincennes: At Vincennes, apple buds should be advanced enough for the prepink spray by about April 14. Rainfall since April 1 totals 2.08 inches. Red-banded leaf roller moths began laying eggs about April 5.

In one part of a local orchard where 64 adults were seen on 10 trees examined April 8, egg masses were found on the lower part of the trunks.

The apple grain aphid began appearing April 5.

At Carbondale, peaches should be blooming by April 14. Tarnished plant bugs were first observed April 7. The first DDT application for cat-facing will probably be by the middle or last of this week, when half of the blossoms are open. The first Oriental fruit moth pupation was observed April 9.

Apples should near the prepink stage this week--too late for dormant spraying. Aphids have been hatching since March 31. An occasional red-banded leaf roller moth has been observed in blocks which received strong DDT last year.

Area 3 - Belleville-Hardin-Centralia: Warm weather should bring peach bloom by the middle of this week. Apples will be in the prepink stage by the latter part of the week. Prebloom spraying will be started in earnest by April 21.

Area 4 - Bedford-Lexington-S.W. Ohio: Elberta peaches should show bloom by April 14. Some apple varieties will be ready for prepink spraying and with the first rain of .3 inch or more they should be protected from scab. Apple grain aphid are abundant at Lexington, but fairly light at Bedford. The first aphid hatch occurred April 5.

Area 5 - Quincy-Pittsfield: Weather will determine the time for prebloom spraying to start. If it continues warm, then spraying will probably start the latter part of this week in the Pittsfield area. Growers in the Quincy area should be prepared to spray a prepink by April 21 at the latest. Peaches are 100 percent killed except in certain orchards of the Pittsfield region.

Areas 6 & 7 - Peoria-Champaign-LaFayette; Northern Indiana-Illinois: Apples will not develop much beyond the delayed dormant stage. The prepink period should not come before April 21.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

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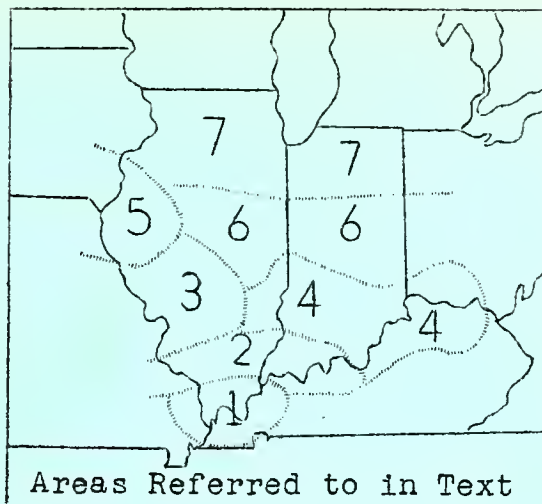
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 4--April 20-26, 1947



ANNOUNCER: Here's our weekly spray service report, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station _____.

General. Let's all jar. There's no better method of studying curculio development than practicing jarring in your own orchard. Every grower should adopt this procedure and make it a habit. The curculio is the Number One peach pest. Let's all fight it.

The latest report from Carbondale says that very little, if any, damage was done to peaches by the April 17 frost from Salem south.

Area 1 - Western Kentucky and Villa Ridge, Illinois: Peaches should be approaching shuck split by April 21. Dissection of curculio collected April 15 show very little egg development. It is probable that egg-laying will not occur before April 25. Where jarring indicates high curculio population, an arsenical petal fall application is suggested to poison them before egg-laying can occur. Stink bugs and tarnished plant bugs are plentiful.

On apples most varieties are either in the pink or early bloom. Sprays for scab control should be applied at least every seven days. Cedar rust and quince rust spores are being spread into orchards. Therefore, Fermate sprays should be started in problem orchards. Codling moth pupation has started.

Area 2 - Carbondale-Vincennes: At Vincennes peaches should be nearing the petal fall stage. Tarnished plant bugs are abundant. Apples will be ready for the pink spray this week. Red-banded leaf roller

adults are abundant at this time. Cool weather has delayed hatching of eggs, and the first leaf roller larvae are expected about April 28. Therefore lead arsenate is not advised in the pink spray except in orchards having high infestations in 1946. It is important to have enough lead arsenate left for a petal fall and at least two cover sprays. No codling moth pupation has occurred.

At Carbondale, peaches should show petal fall this week. Tarnished plant bugs have increased considerably, and curculios have appeared in jarrings from edge rows. On apples, growers are applying scab sprays, and the pink or cluster bud stage should occur this week. Scab sprays at seven-day intervals are suggested. The first codling moth pupa was found April 15.

Area 3 - Belleville-Hardin-Centralia: Peach bloom is expected this week. Growers wishing to use DDT applications for catfacing control are advised to do so when 50 percent of the blooms are open.

Apples are in the prepink, and some pink buds should develop by the latter part of the week. Sulfur sprays should be started and continued at seven-day intervals.

Pears should approach the calyx period by the latter part of this week.

Area 4 - Bedford-Lexington-S. W. Ohio: At Bedford, cool weather has delayed development. Apples should reach the cluster bud stage by April 21. Elberta peaches should approach full bloom. Sulfur applications are suggested to control blossom blight. Tarnished plant bugs are active. If DDT applications are to be used for catfacing control, they should preferably be applied when the peach blooms are 50 percent open. Strawberry growth has started.

Area 5 - Quincy-Pittsfield: At Pittsfield, apples should be approaching the pink stage. At Quincy, the prepink should be fully developed. Scab perithecia are mature and ready to discharge. Sulfur sprays at weekly intervals are suggested.

Area 6 - Peoria-Champaign-La Fayette; Area 7 - Northern Indiana-Illinois: Most orchards will be ready for a prepink sulfur spray this week.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

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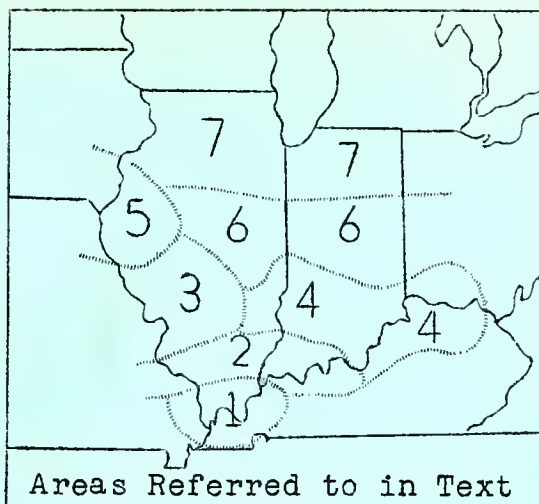
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 5--April 27-May 3, 1947



ANNOUNCER: Here's our weekly spray service report, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station _____.

General. Until the codling moth emerges from its pupal case, there is still time to spray off the rough, loose bark and clean out crotches, knot-holes, etc. By using water under 600 pounds pressure, this job can be done efficiently and quickly--not only making the tree ready for banding, but destroying about 80 percent of the overwintering codling moth. Blotch-susceptible varieties should be receiving Fermate or Karbam at this time in the southern areas. Very little scab discharge has yet occurred, and perithecia are loaded with spores--so be prepared for the first big rain. Keep sulfur on those apple trees. No evidence of peach blossom blight has appeared throughout the entire peach belt. Watch the recommendations for cat-facing control on peaches. Consult your experiment station circular for the proper dilutions of insecticides and fungicides to use. Do not forget the spring applications of fertilizer. Remember, we must keep our trees in good vigor.

Area 1 - Western Kentucky and Villa Ridge, Illinois: Most peach petals are off, and the young peaches are growing rapidly, with some splitting of the shuck. By April 28, if jarrings in your orchard show considerable curculio, it would be wise to apply an early shuck-split arsenical application rather than to wait for the shuck-off stage. Apples should be in full bloom by the 28th. With prevailing weather mostly cool, it might be well to plan a blossom application of wettable sulfur for scab control.

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Although no scab has yet been reported, weather has been ideal for infection, so let's keep at it.

Area 2 - Carbondale-Vincennes: At Vincennes rainfall this past week totaled .85 inch, and the mean temperature was 54.9 degrees F, which is below normal. Peaches have been in full bloom since April 20. It is probable that an early shuck split will occur by the latter part of this week. Tarnish plant bugs are still active but not too numerous--possibly because of low temperatures and rainy weather. No curculio have been jarred to date. Apples should approach a full pink and on some varieties an early bloom this week. Red-banded leaf roller moth emergence has passed its peak. Egg-laying continues, much of it in the lower parts of the tree. No egg hatch is expected until the late pink stage or after.

At Carbondale 95 percent of the peach petals have fallen. The second application for cat-face control should be in the early shuck-split, or when the shucks are just beginning to crack. Apples should approach full bloom this week. Scab control is important at this time. Fermete should be started on blotch-susceptible varieties.

Area 3 - Belleville-Hardin-Centralia: Apples should be full pink this week. Cool weather has delayed development. Sulfur sprays at seven-day intervals are recommended for scab control. Peaches range from full bloom to early petal fall. The second application for cat-face control should be made when the first shucks begin to split. If warm weather continues, pears should be receiving the calyx spray by the 28th.

Area 4 - Bedford-Lexington-S. W. Ohio: Petal fall will occur on peaches this week, and apples will be ready for the pink spray. Maintain a sulfur cover on the foliage for scab control. Applications at weekly intervals should suffice. Crown borer adults will probably be laying eggs, while the strawberry weevil may begin to attack blossom clusters of strawberries this week.

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At Lexington most peach varieties are in the full bloom.

Strawberries show some bloom on the Blakemore variety. Apples will be ready for the pink spray by the 28th. Keep sulfur on those leaves. No curculio have been jarred from peaches, but several tarnish plant bugs have been found. Codling moth pupation is about 6 percent.

Area 5 - Quincy-Pittsfield; Area 6 - Peoria-Champaign-LaFayette;

Area 7 - Northern Indiana-Illinois: Last week's predictions were a bit previous. Weather conditions have slowed development considerably during the past week. So long as the apple is the main fruit, growers in these areas should be concerned mostly with scab control. Keeping a sulfur residue on the foliage at all times is the answer. Sprays at seven-day intervals are recommended.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

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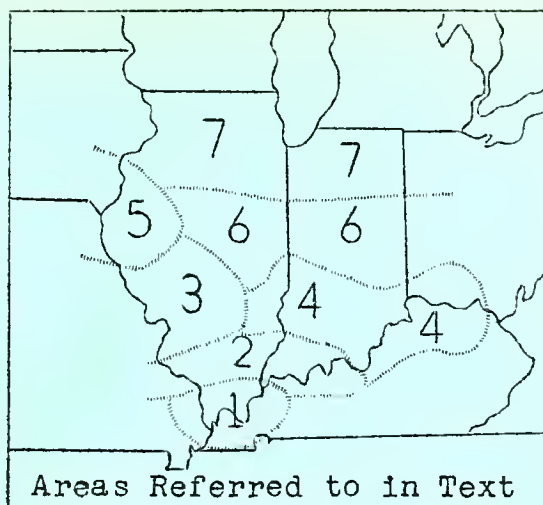
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 6--May 4-10, 1947



ANNOUNCER: Here's our weekly spray service report, presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station_____.

General. Rain, rain and more rain has set the stage for plenty of early apple scab infection. This is the time when scab can be serious, because present infections will soon be producing spores for secondary infections. Orchards in many areas are practically mud-holes, and scab development continues. Apple orchards must receive fungicide protection even though we know that the orchard will be full of ruts when we finish. Growers with dusters are fortunate during this period.

In southern Illinois and western Kentucky, curculio adults are more than plentiful. In some orchards, jarrings indicated 20 per tree April 28. As usual, the edge rows have the most curculio, but plenty of adults are also found 15 rows from the edge. Individual orchards vary, and each grower should therefore jar to determine the situation in his own orchard. Since no reports were made about the April 29 frost, it is assumed that no damage to peach buds occurred.

Area 1 - Western Kentucky and Villa Ridge, Illinois: Peaches are past the shuck-spray period with all shucks off, leaving tender green peaches unprotected from the ravages of the curculio. Curculio adults are plentiful as far in as 15 rows. Seventy percent of the female adults averaged four mature eggs each on April 28. The first arsenical application should have been made by now. A second application

should be made within seven to 10 days after the first. Treat the orchard edges extra heavily. Growers are urged to jar to locate curculio adults.

Apples are past petal fall and should be receiving the calyx spray by this time. Weather has been particularly favorable for scab development. A fungicide at seven-day intervals is recommended. If possible, supplement your spray program with dusts. Fermate should be started on blotch- and rust-susceptible varieties. The first rust spots were seen at Princeton April 29.

Area 2 - Carbondale-Vincennes: At Vincennes the first curculio adults were jarred April 28. Activity of plant bugs is declining, although many may still be found in the orchard. Apples should be ranging from full bloom to early petal fall by May 5. Red-banded leaf roller eggs laid April 6 and 7 began hatching April 29. On fall and winter varieties the peak hatch is expected to occur during late petal fall, so the calyx spray should be the important one to secure control. Thorough spraying of the underside of the leaves is necessary for the calyx and first two cover sprays. The calyx top-off spray should help considerably. Most egg-laying of the spring brood has ended. With warm weather the incubation period should shorten to 10 days or less. Codling moth pupation under the bark on April 29 had reached 25 percent. If warm weather occurs, the first emergency of codling moth can begin May 8. Adults of the two-spotted red mite were observed on pears April 29.

At Carbondale peaches should be cracking the shuck by May 5. Heavy curculio collections have been made by jarring. Tarnished plant bugs have practically disappeared, but stink bugs have increased in numbers. The second application of DDT for cat-facing control should be made by May 5, or at the shuck crack stage. Some orchards may need a double shuck application of lead arsenate to control the curculio, one

early when the shucks are one fourth off and a later one when the shucks are three fourths off. Apples will be ready for the calyx by May 5. Spray extra heavily for scab control. Start Fermate on varieties susceptible to blotch and rust infections.

Area 3 - Belleville-Hardin-Centralia: Peaches are past the petal fall and should be ready for the second application of DDT for cat-facing control this week when the shucks start to crack. Apples will be in full bloom by May 5. A bloom spray may be necessary for scab control. Weather has been ideal for its development. Fermate should be started on blotch- and rust-susceptible varieties. Pears should have received the calyx spray by May 5. A second spray should be made in about seven to 10 days.

Area 4 - Bedford-Lexington-S. W. Ohio: Most apple varieties will be ready for the calyx spray by this week. Heavy, thorough fungicide applications are necessary for scab control. Rainfall and temperature have been ideal for scab development. Aphis are abundant in some orchards, but predators seem to be reducing them. Peaches have passed petal fall, and shucks should start cracking soon. When the base of the shuck splits, apply the DDT application for cat-facing control. Curculios are not particularly abundant. Examination indicates that curculio eggs are developing but have not reached maturity. Concord grapes will be ready for the first Bordeaux spray for black rot within the next seven to 10 days. To the present time strawberry weevil damage has been light.

Areas 5, 6, & 7. - Quincy-Pittsfield, Peoria-Champaign-LaFayette, Northern Indiana-Illinois: Growers in these areas are in the midst of scab control on apples. Weekly applications of fungicide sprays are suggested. If possible, supplement the sprays with sulfur dusts. Many green aphis are on the apple buds, but are not considered to be causing serious damage. Spraying especially to control them is not suggested.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

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Cooperative Extension Work in Agriculture and Home Economics
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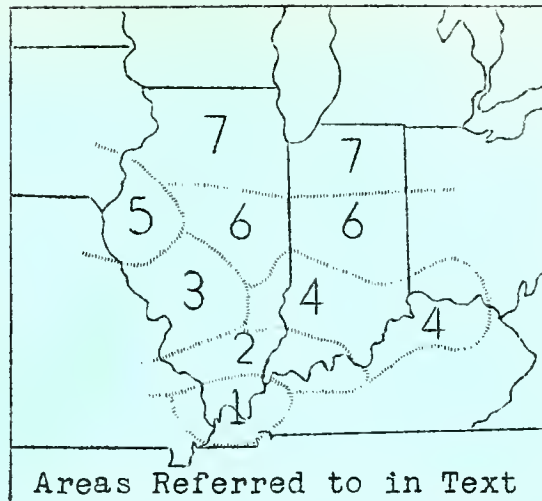
The first part of the book is devoted to a general introduction to the subject of the history of the English language. It deals with the various influences which have shaped the language, from the early Germanic roots to the modern English of today. The author discusses the role of Latin, French, and other languages in the development of English, and also the influence of the Bible and the works of Shakespeare. The second part of the book is a detailed study of the history of the English language from the beginning of the 15th century to the present. It covers the changes in grammar, vocabulary, and pronunciation, and also the influence of social and cultural factors on the language. The third part of the book is a study of the English language in the United States and Canada, and the influence of American English on the English language as a whole. The book is written in a clear and concise style, and is suitable for students of English literature and language.

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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 7--May 11-17, 1947



ANNOUNCER: Here's the weekly spray service reports. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station

General: Curculio are bad, particularly in peach orchards which had heavy infestations in 1946. In Kentucky some growers are jarring all the trees in the orchard to aid in control. Two sheets placed under a tree may catch as many as 100 curculio. Collect these in a container and destroy. Jarring is done most efficiently in early morning and late afternoon. During mid-day curculios are too active to collect by jarring. Apple scab has been found, which means infection occurred early. Thus scab could be very serious this year. Keep the trees covered with a fungicide.

Area 1 - Western Kentucky and Villa Ridge, Illinois: All peach shucks are off, and the young peaches are growing fast. Curculio numbers are high. Practically all female curculio from Louisville south are full of mature eggs. It is suspected that egg laying has occurred but it has not been observed yet. All efforts should be made to keep arsenical sprays or dusts on to prevent curculio damage. Oriental moth emergence is general now.

Apples are past the calyx stage. Scab weather has been ideal. There are still many primary spores for infection. By May 12 secondary spores should be spreading infection, so fungicide protection is highly important. No codling moths have emerged.

Area 2 - Carbondale and Vincennes: At Vincennes peaches should be receiving the split-shuck arsenical application. Apples are ready for the calyx spray.

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Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains.

Codling moth pupation has reached 30% under rough bark. Moth emergence may occur this week if warm weather prevails. The red-banded leaf roller larvae had a peak hatch May 4 and 5. Sixty percent of the egg masses have hatched to date, with a 5% increase in the number of masses the week of May 5.

At Carbondale peaches will have most of the shucks off by May 12. Orchards should be sprayed or dusted with arsenicals because curculios are increasing in numbers over last week. Brown rot blossom blight is prevalent in many peach orchards with twig cankers covered with spores. Be sure to keep a fungicide in the peach spray schedule.

Apples should be past the calyx stage by the 12th. Scab was observed May 9 at Goreville on unsprayed Delicious. No blotch has appeared, but continue full strength Fermate on susceptible varieties. Codling moth emergence has not occurred.

Area 3 - Belleville-Hardin-Centralia: Peaches at Belleville show considerable shuck-splitting, while at Alma the shucks have started cracking at the base. Curculios are serious enough in orchards which had severe 1946 infestations to warrant applying early poisoning sprays. Now is the time to start lead arsenate. Apples vary from full bloom to the calyx period. Calyx sprays will be starting in many orchards May 12.

Area 4 - Bedford-Lexington-S. W. Ohio: Peaches are ready for the shuck-split spray or dust. Curculios are rather abundant, and many females contain fully developed eggs. Egg laying will start as soon as any fruits are exposed. This is a good year to get that first curculio spray on early.

Apples are ready for the calyx application. Almost 70% of the codling moth larvae have pupated, but no emergence has occurred. Strawberries are just beginning to bloom heavily.

Area 5 - Quincy-Pittsfield; Area 6 - Champaign-Peoria-Lafayette; Area 7 - Northern Illinois-Indiana: Cool weather continues to delay development throughout these three areas. Pink buds are showing as far north as Princeton, Ill. on apples.

The first part of the paper discusses the importance of maintaining accurate records of all transactions. This is particularly true for businesses that operate in a highly competitive market. By keeping detailed records, a business can better understand its financial performance and identify areas for improvement. Additionally, accurate records are essential for tax purposes and for obtaining financing from lenders.

The second part of the paper focuses on the importance of maintaining accurate records of all transactions. This is particularly true for businesses that operate in a highly competitive market. By keeping detailed records, a business can better understand its financial performance and identify areas for improvement. Additionally, accurate records are essential for tax purposes and for obtaining financing from lenders.

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The important item is protection against scab. Scab develops even though the temperature is low.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

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The following radio stations are broadcasting the spray service report. In some cases broadcast times are not available, and in others may have been changed. If you are unable to receive the report at the time indicated, consult any of the stations listed for their time of broadcast.

LOCATION	STATION	KC	DAY	CENTRAL STANDARD TIME
<u>Illinois</u>				
Cairo	WKRO	1490		11:40 a.m.
Carbondale	WCIL	1020		12:45
Centralia	WCNT	1210		
Chicago	WBBM	780	Tues.	4:30 a.m.
Chicago	WGN	720	Tues.	4:38 a.m.
Chicago	WLS	890		
Chicago	WMAQ	670		5:15 a.m.
Effingham	WCRA	1090		
Freeport	WFJS	102.1 Mc (FM)		
Galesburg	WGIL	1400		
Harrisburg	WEBQ	1240	Wed.	6:30 p.m.
Herrin	WJPF	1340	Sat.	11:45
Mattoon	WLBH	1170	Mon.	6:30 a.m.
Mt. Vernon	WMIX	103.7 Mc (FM)		
Pekin	WSIV	1140	Mon.	12:25 p.m.
Peoria	WEEK	1350	Sat.	6:15 a.m., 12:45 p.m.
Peoria	WMBD	1470	Tues.	6:05 a.m.
Peoria	WMMJ	1020		10:30 a.m.
Rock Island	WHBF	1270		
Springfield	WTAX	1240	Tues.	6:30
Tuscola	WDZ	1050	Mon.-Sat.	12:45
Urbana	WILL	580	Mon.	12:00
<u>Indiana</u>				
Elkhart	WTRC	1310		12:00
Fort Wayne	WOWO	1190		7:10 a.m.
Indianapolis	WIBC	1070	Sun.	6:00-7:00 a.m.

The following table shows the results of the experiment.

Table 1

Table 1

The results of the experiment are shown in the following table. The first column shows the number of trials, the second column shows the number of correct responses, and the third column shows the percentage of correct responses.

Table 1

The results of the experiment are shown in the following table. The first column shows the number of trials, the second column shows the number of correct responses, and the third column shows the percentage of correct responses.

Number of trials	Number of correct responses	Percentage of correct responses
10	8	80%
20	15	75%
30	22	73%
40	28	70%
50	35	70%
60	42	70%
70	48	69%
80	55	69%
90	62	69%
100	68	68%

LOCATION	STATION	KC	DAY	CENTRAL STANDARD TIME
Indianapolis	WFBS	1260	Mon.	5:30 a.m.
Lafayette	WASK	1450		
Lafayette	WBAA	920	Mon.	12:00
Muncie	WLBC	1340		11:30
Richmond	WKBV	1490	Wed.	7:10 a.m.
Terre Haute	WBOW	1230	Mon., Tues.	12:00

Iowa

Cedar Rapids	WMT	600	Mon., Tues.	6:45 a.m.
Davenport	KSTT	750		6:00-7:30 a.m.

Kentucky

Lexington	WLAP	1450		5:45 a.m.
Louisville	WGRC	1400	Sat.	12:30
Louisville	WHAS	840	Mon.-Fri.	7:20 a.m.

Missouri

Cape Girardeau	KFVS	1400		
Clayton	KXLW	1320	Mon.-Sat.	5:00-6:00 a.m.
Hannibal	KHMO	1340	Mon., Tues.	11:15
St. Louis	KFUO	850		6:30 a.m.
St. Louis	KMOX	1120		
St. Louis	KXOK	630	Mon.	5:55 a.m.
St. Louis	WEW	770		5:30 a.m.

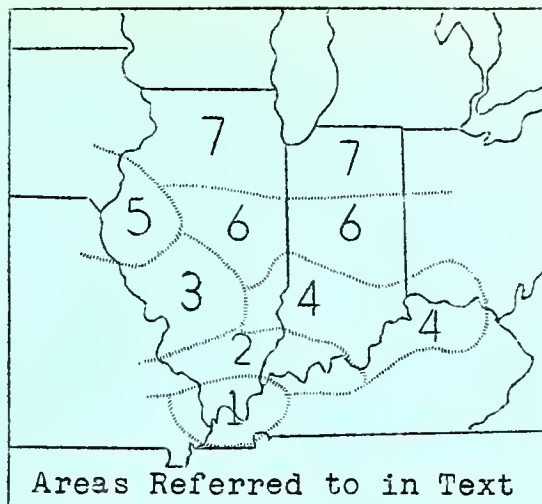
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 8--May 18-24, 1947



ANNOUNCER: Here's the weekly spray service report. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station _____.

General. Apple scab is very severe in unsprayed orchards. Both primary and secondary spores are prevalent; therefore, sprayed orchards can expect some trouble. It would be wise to add a fungicide through the second cover.

Continue blotch sprays on susceptible varieties.

A heavy peach set is fortunate because in many areas curculio is very serious.

Area 1 - Western Kentucky and Villa Ridge, Illinois: Peaches are developing fast with a heavy set on everything except Redbird. Curculio egg laying scars were observed May 13. Lead arsenate protection is necessary at seven-day intervals in severely attacked orchards.

Apple set is variable, with most varieties heavy except Delicious and Winesap. Codling moth emergence started May 9. Warm weather has increased emergence the last few days. The first hatch is not expected before May 19, depending on weather. Rosy aphids are heavy in some blocks which had DDT in 1946. Apple scab is prevalent in unsprayed orchards.

Area 2 - Carbondale-Vincennes: At Vincennes curculio adults are on the increase, and Oriental moth adults started emerging May 8. Peaches are in the shuck fall, thus should be covered with lead arsenate.

codling moth emergence began May 11 from rough bark. Eggs were deposited May 13. Warm weather would bring a hatch by May 23. The first two cover sprays should be applied at seven- to nine-day intervals. Red-banded leafroller egg masses are about 90 per cent hatched. Larvae are not more than half grown. Plan on lead arsenate at least in the first two covers and continue it in the third and fourth covers if the infestation is severe.

At Carbondale peaches are past the shuck stage. Curculio adults have greatly increased to equal the 1946 records. Egg laying adults were observed on plums May 14. Apples show a good set. Emergence stages produced the first codling moth May 14. Most growers are applying the first cover spray.

Area 3 - Belleville-Hardin-Centralia: On peaches the shucks are almost off and curculios are increasing in numbers. Keep the young peaches covered with lead arsenate. Most growers will be finishing the calyx spray on apples, and some will be on the first cover this week. Continue fungicides for scab control. Heavy frosts did a good thinning job on some varieties in eastern Illinois. Pears should receive a cover at this time.

Area 4 - Bedford-Lexington-S. W. Ohio: Heavy frosts this past week killed all strawberry blooms that were open and some apple and peach buds. In general, the damage was not serious. Most growers will be applying the first cover this week on apples. No moth emergence yet. Curculios are not abundant on peaches, but stink bugs are increasing in numbers.

Areas 5, 6, and 7 - Quincy-Pittsfield, Peoria-Champaign-McFayette, Northern Indiana-Illinois: In Area 5 apples are past the petal fall stage at Quincy. In Areas 6 and 7 all varieties should be in full bloom by May 19, and some growers will start the petal fall application. Do not forget the calyx top-off spray.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Wright Powell of the department of horticulture at the University of Illinois.

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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

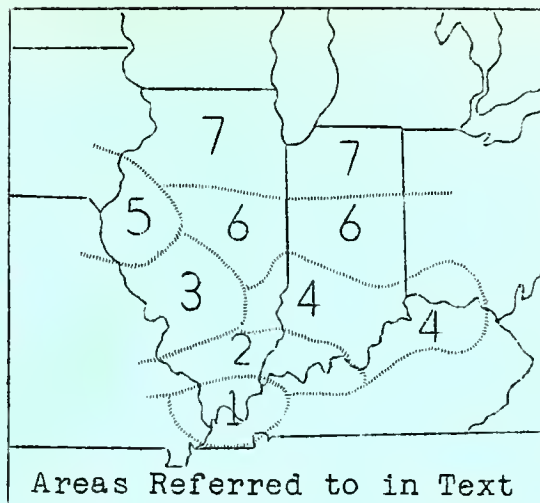
The first part of the year was spent in the field, collecting specimens and making observations on the habits of the various species of birds and mammals. The second part of the year was spent in the laboratory, preparing the specimens and making the necessary measurements and calculations. The third part of the year was spent in the field, making a detailed study of the habits of the various species of birds and mammals. The fourth part of the year was spent in the laboratory, preparing the specimens and making the necessary measurements and calculations. The fifth part of the year was spent in the field, making a detailed study of the habits of the various species of birds and mammals. The sixth part of the year was spent in the laboratory, preparing the specimens and making the necessary measurements and calculations. The seventh part of the year was spent in the field, making a detailed study of the habits of the various species of birds and mammals. The eighth part of the year was spent in the laboratory, preparing the specimens and making the necessary measurements and calculations. The ninth part of the year was spent in the field, making a detailed study of the habits of the various species of birds and mammals. The tenth part of the year was spent in the laboratory, preparing the specimens and making the necessary measurements and calculations.

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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 9--May 25-31, 1947



ANNOUNCER: Here's the weekly spray service report. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station _____.

General: Brown rot twig blight is prevalent in many Illinois peach orchards and is causing dieback. This results from cankers girdling the twig. Spores can be found on the surface of these cankers, so do not omit fungicides from your peach sprays or dusts. Apple scab is serious in many areas. Rosy apple aphid is increasing throughout the tri-state areas and has caused considerable damage in some instances. Predators are active, however, and may retard them. Very little aphid has been found in orchards which received the dormant spray. Plum curculio is still increasing. Arsenical injury is showing in some apple orchards, probably as a result of excessive cool, damp weather. Apple set is excellent. Peaches have set well, except that in Indiana some varieties in low locations are dropping as a result of the May 9 freeze.

Area 1 - Western Kentucky and Villa Ridge, Illinois: Cool

weather this past week has delayed insect development and interfered somewhat with strawberry harvest. Curculio have increased considerably over all of Kentucky, but observations at Villa Ridge indicate some let-up. Wormy drops are plentiful, and many infested peaches can still be found on the trees. One hundred wormy peaches were picked up from under one four-year-old peach tree located in the outside row. Removing these drops from the orchard will be a big factor in reducing second-brood

curculio. On apples codling moth cage emergence has skyrocketed, while trap catches are still generally light. It appears that during the week of May 26 heavy hatch should occur. Fireblight is showing on many varieties. Scab spots are increasingly easy to find. Nonsulfur fungicides are suggested in order to prevent more secondary infection. Use of sulfur should be avoided because of the possible early use of oil for codling moth.

At Cape Girardeau, Missouri, codling moth emergence started May 11 and increased daily through the 14th.

Area 2 - Carbondale-Vincennes: At Vincennes most growers have completed the first cover or seven-day spray. Because of favorable conditions for scab, fungicides should be continued for at least another week. Codling moth emergence has increased, 42 traps catching 109 moths on May 18 and 19. Pupation of overwintering larvae is not much more than 50 percent, so the peak moth emergence cannot occur before May 30. Egg hatch occurred May 23 and should be well under way by May 26, particularly if the weather is warm. Hatch of the first-brood redbanded leafrollers was rather heavy May 15 to 18 and is practically complete. No further hatch of any consequence is anticipated. Lead arsenate will be needed in all first-brood sprays where ANY LEAFROLLERS ARE PRESENT IF DDT IS BEING USED. European red mite first-brood adults have appeared and have produced a few second-brood mites. No two-spotted spider mites have been found.

From Carbondale comes word that curculio are still increasing; therefore, poisoning should be continued in spray or dust form. Wormy peaches are prevalent in several orchards. On apples most growers have finished the second-cover spray. Heavy codling moth emergence occurred from May 15 to 19, but cool weather on May 20 slowed things down. Hatch is expected during this week of the 26th. This will coincide with the application of the third cover, which is the suggested time to start DDT. Growers who have not used Fermate for blotch control should start Bordeaux sprays immediately on susceptible varieties.

Area 3 - Belleville-Hardin-Centralia: Peaches have lost the shuck and curculio are laying eggs fast. Wormy peaches were found May 21. Poison sprays or dusts should be applied frequently. Apples are past the seven-day spray and should be receiving the second cover by the 26th. Scab is showing up in many orchards; therefore, fungicides should be continued another week. Cherry leaf spot was found the 21st. Codling moth hatch has occurred, but hatch is not expected much before June 1.

Area 4 - Bedford-Lexington-S.W. Ohio: At Bedford the first codling moth hatch is expected May 25 if warm weather prevails. Apple scab is severe, so fungicides should be included in every spray. The strawberry weevil continues to attack the bloom. The second black rot spray should be applied to grapes immediately.

At Lexington curculio were unusually abundant May 17. Egg scars are abundant on both peaches and apples. Codling moth emergence began May 18, and increased numbers appeared on the 19th and 20th. The 10-day spray on peaches should be started by the 24th, while the second cover on apples should start by the 26th.

Area 5 - Quincy-Pittsfield: Most growers have finished the first cover spray. Codling moth emergence has occurred in the orchard. Hatch is not likely to occur much before June 1. Some scab is showing, making it necessary to retain a fungicide in the next spray if possible.

Areas 6 and 7 - Peoria-Champaign-La Fayette, Northern Indiana-Illinois: Most orchards will be ready for the first cover spray by the 26th, with the exception of the northernmost areas. Prospects are for a very serious scab infection because recent heavy rains have produced ideal conditions for its development. It is suggested that fungicides be continued at full strength in at least two more sprays.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

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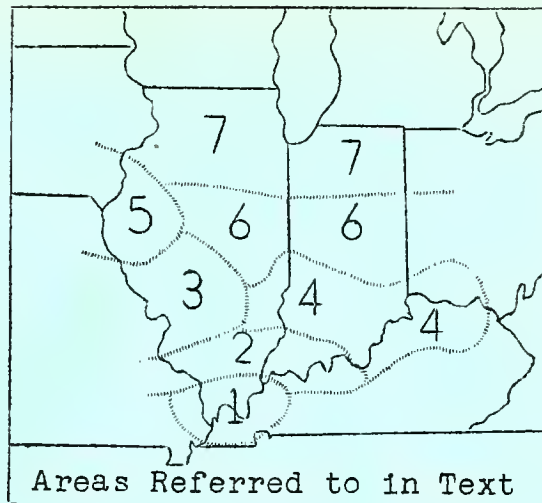
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 10--June 1-7, 1947



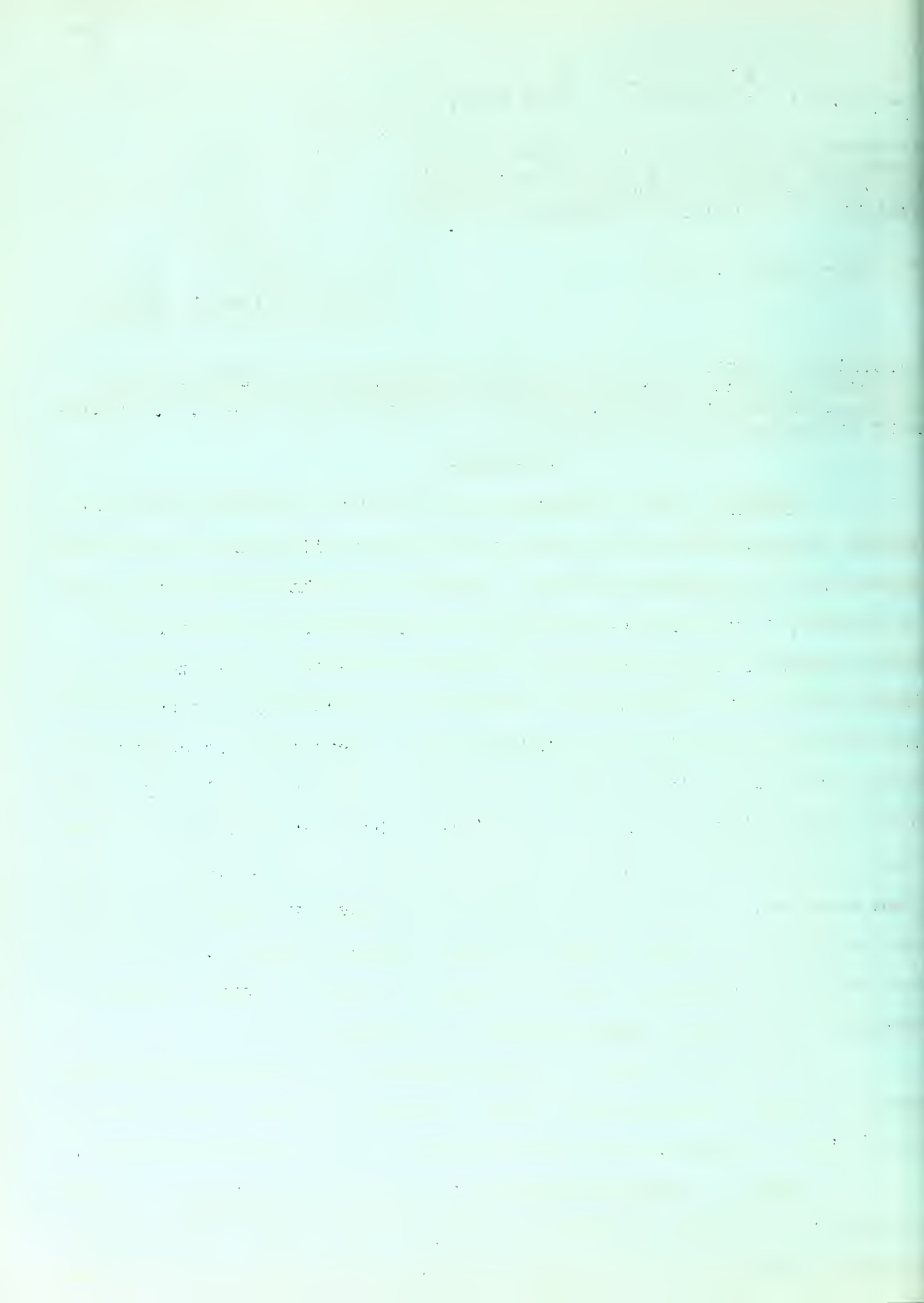
Areas Referred to in Text

ANNOUNCER: Here's the weekly spray service report. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station ____.

General. From Vincennes it is reported that where lead arsenate has been used in the past two or three applications no leafroller larvae have yet reached maturity. However, in orchards where this pest is present, it will not be possible to completely control the first brood because a high percentage of the late-hatching larvae moved out immediately onto terminals and new growth, particularly into new unfolding leaves and into leaves curled by aphids, where they are coming into contact with very little poison. This pest cannot be completely stopped until growth slows up and it is possible to build an adequate arsenical load on all the newest growth before the larvae roll the leaves or tie them together. In one orchard where the carryover was heavy and where the fourth lead arsenate spray was being applied on May 27, live leafroller larvae numbered 32 per 100 leaves on terminal growth. Fifteen percent of the leaves showed evidence of feeding.

First-brood hatch has been completed. No newly hatched larvae have been found during the past week. Those now present range from 1/4 to 5/8 inch in length, and pupation should start within the next week.

Area 1 - Western Kentucky and Villa Ridge, Illinois: On peaches, curculio have dropped considerably during the past week. Wormy dropped fruits are numerous. If possible, they should be picked up and destroyed



immediately. The first worms left dropped peaches May 27 at Paducah. Continued arsenical protection is suggested for at least another week. On apples, codling moth emergence is past the peak. Egg hatch has been light but will pick up with warm weather. Secondary scab continues to develop.

Area 2 - Carbondale-Vincennes: At Vincennes, plum curculio are still more abundant than normally on peaches. On apples, codling moth emergence from under rough bark is 35 percent complete and pupation 77 percent. The egg incubation period is now 10 days. All eggs laid before May 19 hatched by the 29th. The rate of hatch can be expected to increase for at least another 10 to 14 days if temperatures are near normal. Rosy aphids are causing considerable damage. Sprays for control are not practical because it is impossible to reach aphids in curled leaves. Hexaethyl tetraphosphate may do more harm than good by killing predators. DDT at 6 to 8 ounces (actual) per 100 gallons with lead arsenate has not noticeably reduced the aphid predator population and should help to prevent further spread of the aphids. No two-spotted mites have appeared. European red mites were found in one orchard on Golden Delicious at the rate of eight mites and 240 eggs per 100 leaves.

At Carbondale, peaches show a sharp decline in curculio adults. Heavily infested orchards should continue to receive arsenical applications, but not so often as earlier. Dropped peaches are 80 to 98 percent wormy. If it were possible to pick them up and destroy them, it would greatly reduce the second brood.

On apples, codling moth emergence continues to straggle along and is probably delayed by cool weather. Fresh entrances were found May 27. DDT should be included in the present sprays with lead, weak Bordeaux and oil. A trace of red-banded leafroller has been found.

Area 3 - Belleville-Hardin-Centralia: Continued arsenical applications are necessary on peaches. On apples the first hatch of

Codling moth eggs is expected by May 30. Red-banded leafroller is reported moderate to severe in some orchards in Calhoun county. Nonsulfur fungicides are suggested in present sprays for secondary scab prevention.

Area 4 - Bedford-Lexington: At Bedford, codling moth hatch probably should reach a peak in 10 days or so, depending on weather. Rosy aphids are still causing damage. Fireblight is showing on susceptible varieties which were not treated in the bloom. A fungicide is needed on apples for scab control. Curculio are increasing on peaches. Arsenical injury may be severe unless fresh lime-zinc sulfate applications are made. This is the last chance to spray Bordeaux on the grapes for black rot. At Lexington, curculio are declining on peaches. Codling moth development will probably be bunched, making control easier.

Areas 5, 6, and 7 - Quincy-Pittsfield, Peoria-Champaign-La Fayette, Northern Indiana-Illinois: Codling moth emergence is light in Area 5. Because of cool, rainy weather, it is doubtful whether egg laying has occurred. Sprays should be continued at seven- to 10-day intervals, with fungicides included in each spray. Severe scab is showing on primary leaves in many orchards. European red mite adults were found in orchards not having a DDT history at Urbana and Bloomington. Golden Delicious seems to have more than other varieties.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

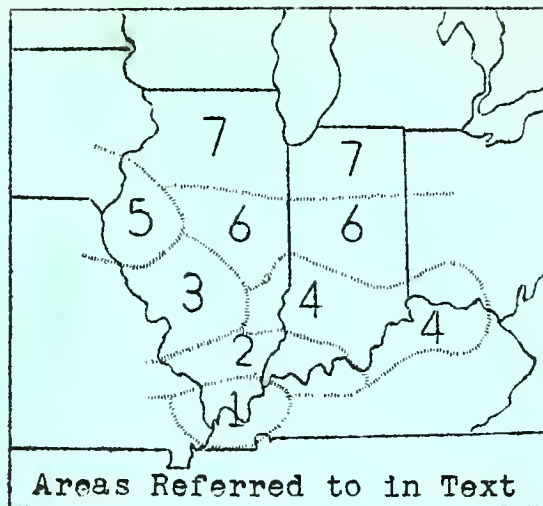
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois
No. 11--June 8-14, 1947



ANNOUNCER: Here's our weekly spray service report. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station ____.

General: Cool weather has delayed codling moth development, with the peak hatch still in the future in the southernmost areas. Therefore we should be thinking about lengthening the intervals between insecticide sprays. Heavy rains, however, make it imperative that fungicide protection be continued at least at seven-day intervals. Apple scab is very serious even in many well-sprayed orchards and will continue to develop rapidly with such ideal conditions. Arsenical injury is also prevalent in many peach orchards; therefore applications of lime alone or zinc-sulfate-lime are suggested.

Area 1 - Western Kentucky and Villa Ridge, Illinois: Peach thinning is under way. Thinning should give growers the opportunity to destroy many infested fruits. Curculio numbers are low, while worms are leaving dropped fruit. Most orchards have enough wormy drops to insure a large second brood. Additional first-brood arsenical sprays are not suggested generally. Follow-up sprays with lime alone or zinc-sulfate-lime should be made 10 days after the last spray. Brown rot is showing on some young Redbirds. Growers are advised to continue sulfur applications until harvest.

Apples are growing fast. Codling moth hatch is well under way, so it's wise to maintain adequate cover on the fruit.

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 354

LECTURE 1

LECTURE 2

Area 2 - Carbondale-Vincennes: At Vincennes, about one third of the overwintering codling moth larvae are still on the tree. Warm weather should bring the rate of hatch to a moderate peak. Egg incubation period is from 10 to 12 days, so that all eggs laid before May 25 have hatched. The rate of spread of the rosy aphid has greatly decreased because of the feeding of predators and migration of adults from the apple. The apple aphid is still increasing except where DDT or nicotine sprays have been applied. No red-banded leafroller pupae have been found to date. An examination of more than 5,000 leaves on plots receiving various treatments shows a 50 percent reduction in numbers of larvae from last week's average of 32 per 1,000 leaves. Most surviving larvae are still feeding in new unfolding leaves. Peaches show a 50 percent reduction of curculio.

At Carbondale there is still a high percentage of codling moths to emerge. Cool weather has delayed hatch. On peaches curculio adult numbers continue to be low. This is the time to stretch the intervals between arsenical applications. A considerable number of curculio larvae are leaving the dropped peaches. Oriental fruit moth so far has produced a light twig infestation.

Area 3 - Belleville-Hardin-Centralia: In peaches the peak for dropping of curculio-infested fruits has passed. Oriental fruit moth are showing heavy twig damage, particularly in the Calhoun county area. Apples are in the approximate third cover stage and should be receiving the first DDT sprays. Be sure to continue lead arsenate through the fourth cover for red-banded leafroller, even though a reduction in larvae numbers has been noticed during the past week.

Area 4 - Bedford-Lexington-S. W. Ohio: The peak codling moth emergence has passed, the first good evidence of hatch showing up May 31. If only two DDT sprays are to be applied, the first should be made

immediately. Oriental fruit moth infestation is light. Curculio adults have practically disappeared from the trees, while no larvae have yet left the dropped fruits. Grapes are in bloom.

Areas 5, 6, and 7 - Quincy-Pittsfield; Peoria-Champaign-La Fayette; Northern Indiana-Illinois: Moth emergence is prevalent in Areas 5 and 6, but no hatch has yet been observed. No emergence has occurred in Area 7. In general scab is the big problem. Many orchards received a severe early infection of the primary leaves, which produced a great deal of inoculum for secondary infection of new leaves. Even well-sprayed orchards are showing serious infection. Nonsulfur fungicides should be continued at full strength in Areas 5 and 6 if the early use of oil is planned for codling moth control. In Area 7 continued use of full strength sulfur is recommended.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

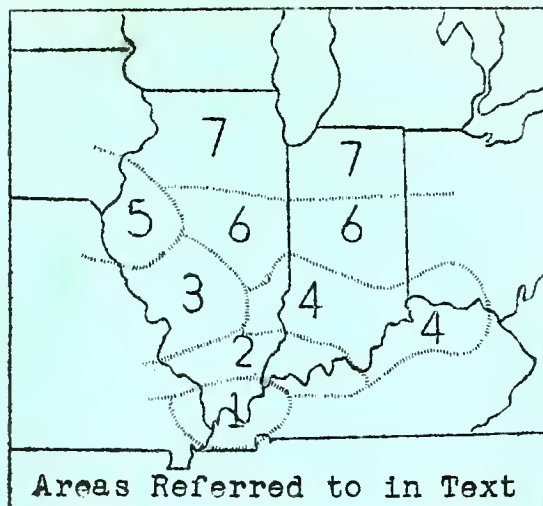
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
and Home Economics, University of Illinois
College of Agriculture, Urbana, Illinois
No. 12--June 15-21, 1947



ANNOUNCER: Here's our weekly spray service report. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station ____.

General: The week of June 16 can be called the peach codling moth week. Peak hatches of first-brood larvae are expected throughout the tri-state areas. Scab continues to be serious with fruit infection prevalent in well-sprayed orchards. Fireblight is showing up in many orchards and in some areas is very serious, particularly on Jonathan apples. Now is the time to start peach thinning.

Area 1 - Western Kentucky and Villa Ridge, Illinois: Curculio adult numbers are down and a large percentage of worms have left dropped fruit. Growers planning to use cultivation to help reduce second-brood curculio should start their discing at an early date.

Codling moth cage emergence and trap catches have picked up during the last few warm days. The heaviest hatch of the season, to date, should be underway in most parts of Kentucky and likely will be continued by the late moths now emerging. Sufficient red mites are appearing in some orchards to warrant severe infestation soon if not treated. Weak summer fungicides are suggested to curb secondary scab infection.

Area 2 - Carbondale-Vincennes: At Vincennes, 80 percent of the spring brood of codling moth has emerged. The current high temperatures have shortened the incubation period to six days and all eggs laid during the 11 days from May 26 to June 5 inclusive have hatched during

the past seven days. This constitutes the peak of first-brood hatch, but the rate of hatch is expected to continue at a comparatively high level for another 10 days. It will not be completed before July 4 by which time second-brood hatch should start.

In some orchards, water sprouts are supporting a fairly heavy infestation of older red-banded leafroller larvae. The first pupae were found June 5. Adults should emerge soon with second-brood larvae hatching approximately June 25.

The European red mite and two-spotted spider mite are both on the increase and may develop to destructive populations by July 1 in some orchards. Aerial colonies of the wooly apple aphid were first observed June 11.

At Carbondale, definite increases in codling moth emergence have occurred. A peak hatch is very likely to occur the week of June 16. Rosy aphid is disappearing because of the work of predators. On peaches, curculio adults are still at a low ebb. Larvae have been leaving the dropped fruit in considerable numbers. From now until the first week in July cultivation will aid in reducing the second brood as pupation in the soil will occur soon. Picking up peaches now would not be worth while because a natural drop has greatly decreased the percentage of infested fruit on the ground.

Area 3 - Belleville-Hardin-Centralia: Peak moth emergence from cages occurred June 9 and 10. This week of June 16 should be an important one for codling moth. Entries are easy to find.

Curculio adults have dropped to one third of last week's population. A high percentage of dropped peaches is wormy, thus picking them up now would help reduce the second brood. Some growers are doing this on the outside rows particularly.

Pear psylla is getting serious in some orchards. Leaf spot is not serious as yet, with unsprayed trees about 15 percent infected.

Weak Bordeaux should be sufficient to keep leaf spot in check for the remainder of the season in sprayed blocks.

Area 4 - Bedford-Lexington-S. W. Ohio: Codling moth emergence is about over but a heavy hatch started June 9 and will probably continue through the 19th.

Many dropped peaches still have curculio larvae. Larvae first started leaving peaches about June 6 with a gradual increase each succeeding day.

The third spray for black rot of grapes should be applied as soon as the bloom period is passed. This should be within the week of the 16th.

Strawberry harvest is about two-thirds past.

Area 5 - Quincy-Pittsfield: At Pittsfield a heavy cage emergence of codling moths occurred through June 8 (the last report). At Quincy, the first entries were found the 9th. With warm weather a heavy hatch can be expected by the 16th and will probably continue for several days. Scab is still a problem, but weak summer fungicides should suffice to control secondary infection. Fireblight is very serious on Jonathan and, it is estimated, will cause a 25 percent reduction in crops. Nothing can be done about this disease at this time.

Areas 6 and 7 - Peoria-Champaign-La Fayette, Northern Indiana-Illinois: Codling moth emergence has occurred throughout this area except at the Barrington, Illinois, cage. Moline reported a heavy emergence June 8 and 9. No entries have been found at Urbana, probably because of the abundant rainfall and fairly cool weather.

Scab continues to be serious and full strength fungicides are recommended. Fruit infection is as high as 42 percent in some orchards. Jonathan and Golden Delicious seem to have the most serious infections.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

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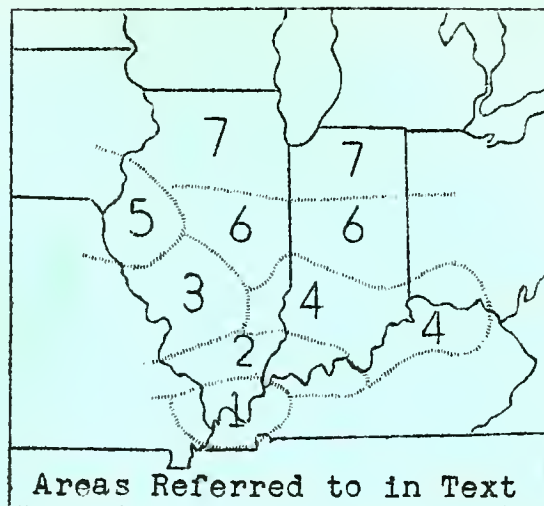
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 13--June 22-28, 1947



ANNOUNCER: Here's our weekly spray service report. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station _____.

General: No more DDT than necessary should be used in the apple orchard. For this reason we are stressing sanitation measures for codling moth control wherever possible. Banding should be started at once in the Kentucky and southern Illinois areas. Treated bands play an important part in reducing second-brood codling moth. Continue scab sprays where they are needed because of ideal weather for scab development. Do not forget arsenical corrective sprays or dusts on peaches. Disking now is suggested to reduce second-brood curculio in the southern areas. Curculio larvae go as deep as three to four inches in the soil to pupate. Peaches should be thinned now.

Area 1 - Western Kentucky and Villa Ridge, Illinois: Curculio adults are still scarce. Second-brood emergence is not expected before late June. Oriental fruit moth is light. Brown rot is appearing on green peaches, developing a supply of spores for later infections. May-flower peach harvest is starting.

Codling moth emergence has finally slowed up, indicating an approaching end to the first brood. Bait trap catches at Cape Girardeau indicate an average of three moths per day up to June 12.

Area 2 - Carbondale-Vincennes: At Vincennes the temperature this past week has been five degrees below normal, with June rainfall as

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of June 18 up to 3.96 inches. Arsenical injury is reported to be increasing on apple. Codling moth emergence is 90 percent complete, with the remaining 10 percent in deep cavities. Cool weather has slowed up the rate of hatch. It can be expected to increase with the first warm day or two and then show a gradual decline during the remainder of the month. Some first-brood red-banded leafroller larvae are still active, while second-brood moth emergence is gradually increasing. Where this pest is present, at least one more lead arsenate spray should be applied before July 4. Unfavorable weather has decreased mite development, but growers should watch their orchards carefully and change to the suggested miticide programs when the average infection approximates two mites per leaf.

At Carbondale first-brood codling moth emergence is nearly over. Larvae are maturing rapidly and should be leaving the fruit before long. Thus banding should be done at once. The mite population is very light. On peaches curculio is at the lowest point since it first started. Disking is suggested to destroy pupation quarters in the ground. Oriental fruit moth is light, with very little evidence of second brood.

Area 3 - Belleville-Hardin-Centralia: Curculio jarrings at Alma June 18 showed a definite reduction in population. Jarrings from five trees brought six to eight curculio, whereas earlier in the season 53 to 60 were counted. A high percentage of dropped fruit still contains worms, so picking up and burning could still be done. Sulfur should be continued for brown rot control. Codling moth cages at Dix, Farina, Belleville and Grafton all show that the first-brood emergence is about over. Considerable hatch may still occur with the first warm days, however. Continue weak summer fungicides if possible for scab control.

Area 4 - Bedford-Lexington-S.W. Ohio: At Bedford bait trap catches of codling moth were extremely heavy June 17 and 18. Thus moths are in the orchard, and a few warm days should bring a big hatch.

Arsenical injury is showing on peaches, and a fresh lime spray should be applied immediately. Grape growers should be on the watch for leafhoppers, berry-moth, and leaf-eating insects and apply DDT accordingly.

Aroma strawberry harvest ended June 19. At Lexington only a few codling moths continue to emerge, indicating the end of the first-brood. Curculio larvae are still leaving dropped peaches. Brown rot is serious on ripening sweet cherries. Oriental fruit moth is light. In southwestern Ohio growers should be finished with the third cover on apples and are cautioned to be on the watch for blotch, bitter rot and secondary scab development. Peaches should be protected from brown rot with mild sulfur.

Areas 5, 6, and 7 - Quincy-Pittsfield-Peoria-Champaign-La Fayette, Northern Indiana-Illinois: Codling moth entries continue to occur in the Pittsfield, Quincy and Urbana areas. It is doubtful whether the peak hatch has yet occurred. Warm weather should bring a lot of activity both in egg laying and hatching throughout the three areas. Scab continues to be a problem. One-half to full-strength fungicides should be continued, depending on how serious scab is in the individual orchards. Severe fruit infections are expected in many orchards because of the intensity of the foliage infection. Grape growers should be watching for the berry-moth and leafhoppers.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

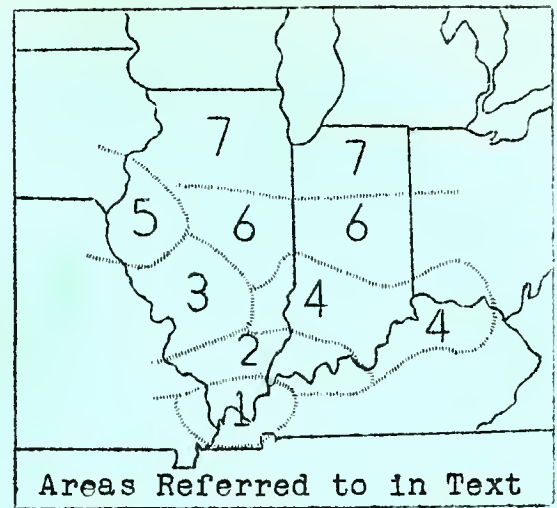
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 14--June 30-July 5, 1947



ANNOUNCER: Here's our weekly spray service report. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station _____.

Area 1 - Western Kentucky and Villa Ridge, Illinois: Very few moths are now emerging from cages, and bait traps show no recent catches. This situation indicates that first-brood codling moth has ended and the second brood has not yet started. Many mature larvae are leaving the fruit. The mite population is increasing in orchards that were observed. Recent counts showed a range of two to 32 mites per leaf. Curculio adults are very scarce, and there is no indication of a second brood appearing. Peach twigs wilted from the second-brood Oriental fruit moth have been observed. No bitter rot has been reported.

Area 2 - Carbondale-Vincennes: At Vincennes continued wet weather has allowed apple scab to become serious. Fungicides should be continued, if possible, in problem orchards. First-brood codling moth emergence is about over, but eggs will continue to hatch well into July. Therefore it is important to keep a protective covering on the fruit. Orchard mites are apparently showing some increase.

At Carbondale curculio continues to be scarce, while second-brood Oriental fruit moth is starting to wilt twigs. Arsenical corrective sprays should not be forgotten. Codling moth is low, but hatch is likely to continue for some time. Because of the oncoming Transparent harvest, most growers have given late apples an additional cover to hold

over during this period. Mite damage is very light. Recent counts show fewer than one mite per 100 leaves. Numbers of green apple aphids are increasing.

Area 3 - Belleville-Hardin-Centralia: Curculio adults are scarce. There are still larvae left in the peaches, but diskings should be in order. Codling moth egg hatch continues, and new entries are easy to find, particularly in the tops of the trees. Some codling moth larvae are within a few days of maturity and will be leaving the apples soon. Tree banding should be done within the next week. Red-banded leafroller larvae are feeding on fruit in some DDT-sprayed orchards. Green peaches are showing brown rot infection, and fungicides should be continued. Apple scab is still serious in many orchards.

Area 4 - Bedford-Lexington-S.W. Ohio: Codling moth adults are low in bait trap catches, while considerable egg-hatching continues. The first mature larvae are leaving the fruit. Leafroller damage is light, but aphids are increasing. Scab continues to be serious, and thus fungicides should be continued. Some curculio larvae are still leaving peaches. Arsenical injury on peaches progresses, indicating the need for corrective sprays.

Areas 5 and 6 - Quincy-Pittsfield-Peoria-Champaign-La Fayette: New codling moth entries are prevalent throughout these two areas. Sprays should be applied at 10-day intervals at least. Scab is very serious in many orchards, and fungicides should therefore be included in the codling moth sprays. Grape berry moth larvae were found feeding on the young fruit at Nauvoo on the 25th. Thorough insecticide sprays should be applied immediately if spraying hasn't been done within the past week.

Area 7 - Northern Indiana-Illinois: Codling moth cage emergence at Barrington was heavy from June 10 through the 24th. Heavy hatching should be occurring between now and July 10. Scab is terrific in many orchards, and full-strength fungicides are recommended if the weather does not turn too hot--that is, above 80 degrees. In orchards where codling moth is not a problem, scab sprays should still be continued. Arsenical sprays should be applied around July 1 for apple maggot.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the department of horticulture at the University of Illinois.

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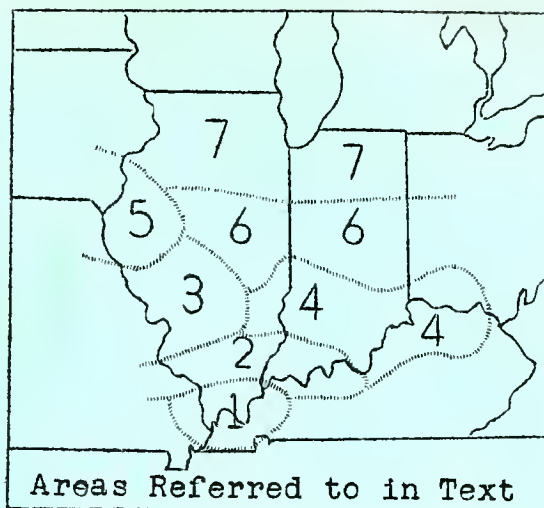
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Cooperative Extension Work in Agriculture and Home Economics
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 15--July 6-12, 1947



ANNOUNCER: Here's our weekly spray service report. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station _____.

Area 1 - Western Kentucky and Villa Ridge, Illinois: Adult codling moths are still scarce, but second-brood emergence has begun. Emergence of curculio adults has increased greatly since last week, and the "month-before-harvest" spray should be applied in this area before July 9 or 10. Second-brood Oriental fruit moth damage is still increasing.

Area 2 - Carbondale-Vincennes: There is still some codling-moth activity in orchards in this region, representing the last of the first-brood moths and probably a few early second-brood adults. It appears that there will be no complete stoppage between broods this year. Curculios are emerging in sufficient numbers to warrant the application of last-brood sprays and dusts in this area during the week of July 7. Although evidence of second-brood Oriental fruit moth is increasing in this area, DDT sprays or dusts, if used at all against this pest, should be delayed until about three weeks before harvest in order not to interfere with parasite activity, which is now at its peak.

Area 3 - Belleville, Hardin, Centralia: Bait jar catches of codling moth are low, and second-brood adults are not yet emerging.

Here, as well as in the areas farther north, first-brood codling-moth activity will probably continue at about its present level into the second-brood period, with no complete break to mark the end of the first brood. Curculio emergence should begin in this region next week; therefore disking should be completed as soon as possible. Worms are still leaving the peaches in large numbers in this area. Rosy apple aphids are decreasing, but an increase in green apple aphids is apparent here and farther north. Mites are gradually increasing throughout the apple-growing areas, and infestations of this pest should be watched closely during the next few weeks, particularly if there is a considerable decrease in rainfall.

Areas 4, 5, & 6 - Bedford, Lexington, S. W. Ohio, Quincy, Pittsfield, Peoria, Champaign, LaFayette: Codling-moth activity is reduced, but a considerable overlapping of first and second broods is to be expected; consequently spraying will need to be continued at 10-day to two-week intervals. Scab is still a problem, and fungicides should be included in the next sprays as long as frequent rains continue. Second-brood Oriental fruit moth activity has increased sharply, especially in the western part of these areas; but no curculio emergence has yet been reported. An increase of aphids and leafhoppers on grapes has become evident.

Area 7 - Northern Indiana, Illinois: Adult codling moths are still emerging from cages in small numbers throughout this region. Heavy hatch of eggs is continuing, and scab is still a serious problem. Mites are showing up in larger numbers and may be serious if the weather becomes hot and dry.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Carl J. Weinman, of the Illinois Natural History Survey.

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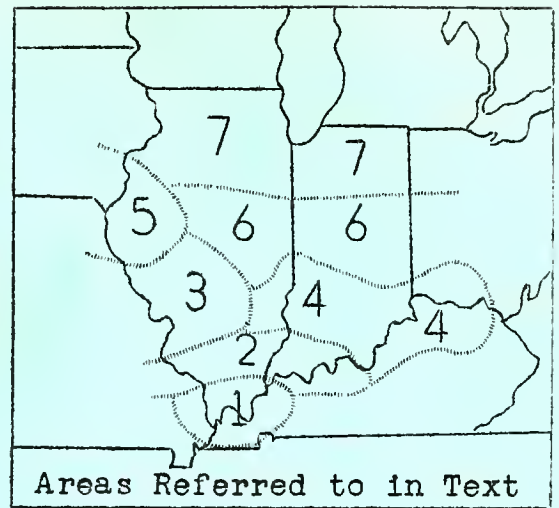
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 15--July 6-12, 1947



ANNOUNCER: Here's our weekly spray service report. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station ____.

Area 1 - Western Kentucky and Villa Ridge, Illinois: Adult codling moths are still scarce, but second-brood emergence has begun. Emergence of curculio adults has increased greatly since last week, and the "month-before-harvest" spray should be applied in this area before July 9 or 10. Second-brood Oriental fruit moth damage is still increasing.

Area 2 - Carbondale-Vincennes: There is still some codling-moth activity in orchards in this region, representing the last of the first-brood moths and probably a few early second-brood adults. It appears that there will be no complete stoppage between broods this year. Curculios are emerging in sufficient numbers to warrant the application of last-brood sprays and dusts in this area during the week of July 7. Although evidence of second-brood Oriental fruit moth is increasing in this area, DDT sprays or dusts, if used at all against this pest, should be delayed until about three weeks before harvest in order not to interfere with parasite activity, which is now at its peak.

Area 3 - Belleville, Hardin, Centralia: Bait jar catches of codling moth are low, and second-brood adults are not yet emerging.

Here, as well as in the areas farther north, first-brood codling-moth activity will probably continue at about its present level into the second-brood period, with no complete break to mark the end of the first brood. Curculio emergence should begin in this region next week; therefore diskling should be completed as soon as possible. Worms are still leaving the peaches in large numbers in this area. Rosy apple aphids are decreasing, but an increase in green apple aphids is apparent here and farther north. Mites are gradually increasing throughout the apple-growing areas, and infestations of this pest should be watched closely during the next few weeks, particularly if there is a considerable decrease in rainfall.

Areas 4, 5, & 6 - Bedford, Lexington, S. W. Ohio, Quincy, Pittsfield, Peoria, Champaign, LaFayette: Codling-moth activity is reduced, but a considerable overlapping of first and second broods is to be expected; consequently spraying will need to be continued at 10-day to two-week intervals. Scab is still a problem, and fungicides should be included in the next sprays as long as frequent rains continue. Second-brood Oriental fruit moth activity has increased sharply, especially in the western part of these areas; but no curculio emergence has yet been reported. An increase of aphids and leafhoppers on grapes has become evident.

Area 7 - Northern Indiana, Illinois: Adult codling moths are still emerging from cages in small numbers throughout this region. Heavy hatch of eggs is continuing, and scab is still a serious problem. Mites are showing up in larger numbers and may be serious if the weather becomes hot and dry.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Carl J. Weinman, of the Illinois Natural History Survey.

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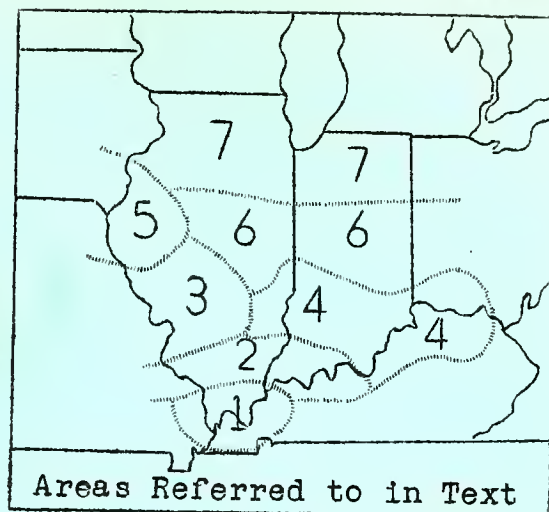
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 16--July 13-19, 1947



Areas Referred to in Text

ANNOUNCER: Here's our weekly spray service report. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station ____.

Area 1 - Western Kentucky and Villa Ridge, Illinois: Several codling moths are appearing in bait traps, indicating the start of the second brood. Cover sprays should be applied as soon as possible. Curculio adults are emerging in large numbers from soil cages, and jarrings indicate that many are in the peach orchard. Peach growers who have not already done so should make the first month-before-harvest application at once.

No bitter rot has been reported, but 4-6-100 Bordeaux sprays are suggested in problem orchards.

Areas 2 and 3 - Carbondale-Vincennes-Belleville-Hardin-Centralia: Codling moth egg hatch is continuing to some extent, being probably a combination of late first- and early second-brood worms. Hatch may be more noticeable by July 14, but the peak is not expected before the 20th or later if subnormal temperatures continue. In most orchards the between-brood spray interval should not exceed three weeks. Red mite has reached very destructive levels in scattered orchards. No heavy outbreaks of the two-spotted mite have occurred as yet, but they could develop if dry weather prevails.

Curculios are on the rampage again. Jarring revealed as many adults now as in the peak first-brood period. Thus if poison applications have not already been applied, they should be started immediately.

Growers who experienced grasshopper damage in 1946 and who expect to use benzene hexachloride or chlordane for control this season should prepare to apply the treatment. Young 'hoppers up to $\frac{1}{2}$ inch long are abundant, and in certain orchards the outbreak can be expected to be as severe as in 1946.

Brown rot treatments should be continued. Bitter rot blocks should be observed at weekly intervals for signs of infection.

Area 4 - Bedford-Lexington-S.W. Ohio: Bait trap catches of codling moths have shown some increase the past few days at Bedford, while at Lexington emergence is expected anytime. Both rosy and green aphids are increasing. No indications of mite damage have appeared. Curculio adults are still in peach orchards in very low numbers. Brown rot treatments should be continued where necessary, and the use of fungicides should also be continued if needed for scab control.

Areas 5, 6 and 7 - Quincy-Pittsfield-Peoria-Champaign-La Fayette-Northern Indiana-Illinois: Codling moth hatch continues with each warm day, and scab develops with each wet day. Between the two, sprays of insecticide and fungicide materials are necessary in most orchards at least at 10-day intervals. Rains have prevented increased mite infestations. Each grower should plan his own program from now on. Some growers will not need to spray the rest of the season, while others will need to keep at it until harvest.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the Department of Horticulture, University of Illinois.

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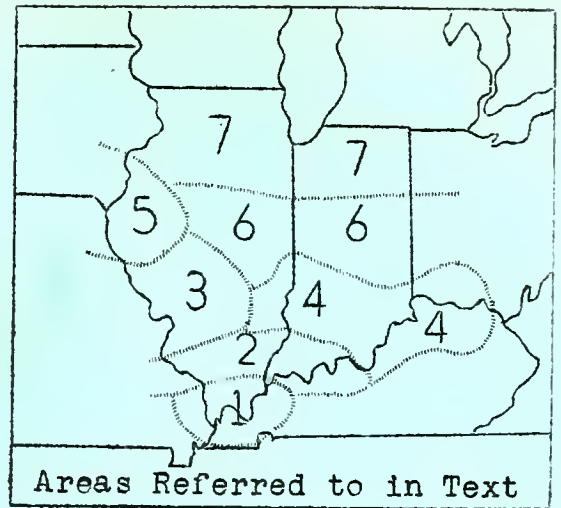
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
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Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 16--July 13-19, 1947



Areas Referred to in Text

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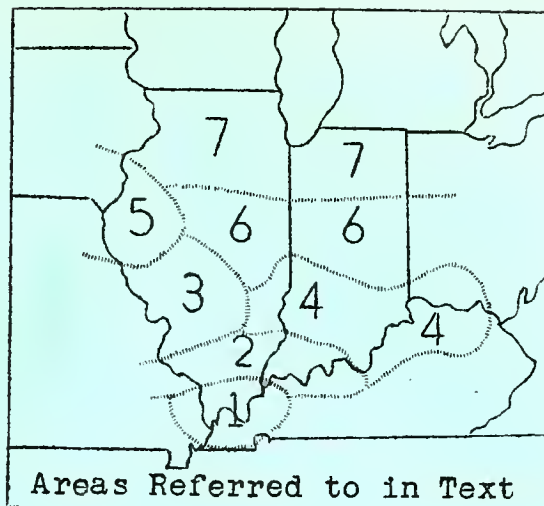
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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 17--July 20-26, 1947



ANNOUNCER: Here's our weekly spray service report. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station_____.

Area 1 - Western Kentucky and Villa Ridge, Illinois: Golden

Jubilee harvest is about ready to start at Paducah. Curculio emergence increased somewhat on July 15 and 16. Dissection of these adults on the 16th showed less than 10 percent containing mature eggs, the majority showing no egg development or only the very early stages. Another arsenical application, preferably a dust, should be made now.

Codling moth emergence is continuing, and thus protection is needed at the usual second-brood time interval. Bitter rot was found on one Ben Davis tree in the Paducah section July 15.

Miticide sprays are suggested because of the general increase in numbers of these pests.

Area 2 - Carbondale and Vincennes: At Vincennes extensive first-brood codling moth counts in various orchards indicate that the average infestation is approximately one-half that of a year ago. If your orchard has 10 worms or more per 1,000 apples, then two or three second-brood DDT or nicotine-bentonite oil sprays will be needed. With an infestation of less than 1 worm per 1,000 apples, no second-brood sprays need be applied provided the blocks are one-fourth mile or more

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

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TO THE PHYSICS DEPARTMENT

CHICAGO, ILL.

FROM THE PHYSICS DEPARTMENT

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away from heavier infestations. Where second-brood sprays are needed, they should be applied immediately, as hatch is increasing gradually.

Third-brood European red mite hatch is at its peak, and populations are increasing rapidly. Growers who find mites now and who are prepared to use miticides should spray immediately to prevent a heavy deposition of fourth-brood eggs which may already be starting.

Second-brood red-banded leafroller hatch is continuing, with the first larvae up to $\frac{1}{2}$ inch in size. These pests do not seem to be prevalent where lead arsenate was used thoroughly in the late first-brood sprays.

Young grasshoppers are abundant in some orchards, and fruit damage can be expected later if chlordane or benzene hexachloride treatments are not planned.

Curculio numbers are increasing rapidly, and a heavy second-brood infestation is anticipated.

At Carbondale codling moth emergence has greatly increased, and considerable hatch is expected this week of July 21. Second-brood sprays should not be delayed any longer. Red mites are definitely low, the latest count showing 15 mites per 100 leaves. Curculio numbers are about the same, if not a little larger than a week ago. It is predicted that quality peaches will be the ones to sell this year, so keep at the curculio.

Area 3 - Belleville-Hardin-Centralia: Second-brood eggs are fairly abundant in some orchards, and hatch is well under way. Most of the infestation is in the tops of the tallest trees. The taller the trees, the more worms, even in orchards well sprayed with DDT. Curculio are increasing in numbers each week but still haven't reached the first-brood peak.

The first of these is the fact that the United States is a young nation, and its history is therefore a history of growth and development. The second is the fact that the United States is a large nation, and its history is therefore a history of expansion and conquest. The third is the fact that the United States is a diverse nation, and its history is therefore a history of conflict and compromise. The fourth is the fact that the United States is a nation of immigrants, and its history is therefore a history of assimilation and integration. The fifth is the fact that the United States is a nation of pioneers, and its history is therefore a history of exploration and discovery. The sixth is the fact that the United States is a nation of entrepreneurs, and its history is therefore a history of innovation and progress. The seventh is the fact that the United States is a nation of idealists, and its history is therefore a history of vision and aspiration. The eighth is the fact that the United States is a nation of pragmatists, and its history is therefore a history of action and achievement. The ninth is the fact that the United States is a nation of dreamers, and its history is therefore a history of hope and possibility. The tenth is the fact that the United States is a nation of doers, and its history is therefore a history of accomplishment and success.

The history of the United States is a story of a nation that has grown from a small colony to a great power. It is a story of a nation that has expanded its territory and influence across the continent. It is a story of a nation that has fought for its freedom and independence. It is a story of a nation that has struggled to unite its diverse people. It is a story of a nation that has pursued its dreams and aspirations. It is a story of a nation that has achieved its goals and ambitions. It is a story of a nation that has made its mark on the world. It is a story of a nation that has inspired the world. It is a story of a nation that has changed the world. It is a story of a nation that has shaped the future. It is a story of a nation that has created a legacy. It is a story of a nation that has left a mark. It is a story of a nation that has made a difference. It is a story of a nation that has changed the course of history. It is a story of a nation that has shaped the destiny of the world. It is a story of a nation that has created a legacy for the future. It is a story of a nation that has left a mark on the world. It is a story of a nation that has made a difference in the lives of millions of people. It is a story of a nation that has changed the course of history. It is a story of a nation that has shaped the destiny of the world. It is a story of a nation that has created a legacy for the future. It is a story of a nation that has left a mark on the world. It is a story of a nation that has made a difference in the lives of millions of people.

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Area 4 - Bedford-Lexington-S. W. Ohio: At Bedford codling moth bait trap catches are slowly increasing, indicating that the second brood is well under way. Scab continues to be a problem, and bitter rot is appearing. Grasshoppers are becoming a threat in some orchards. Peaches are showing some drop, which probably is the result of early freeze injury. At Lexington, second-brood development has not yet occurred. Red mite is abundant on many varieties of apples, and Delicious is showing some bronzing. DN 111 plus DDT is suggested as soon as possible where red mites are present.

Areas 5, 6 and 7 - Quincy-Pittsfield-Champaign-Peoria-Lafayette-Northern Illinois-Indiana: Some first-brood codling moth hatch continues, but in general it is now the between-brood period. Fungicides are still necessary in some orchards. Frequent close observation should be made in your orchard. Red mites are prevalent in northern Illinois. These pests should be watched and sprays applied accordingly.

Late first-brood grape berry moths have produced some fruit injury at Nauvoo. Continued spraying is suggested now to maintain adequate protection. Grape foliage is extra thick this year, and thus heavier than normal applications should be made.

The annual summer tour of the Illinois State Horticultural Society, cooperating with the Illinois Extension Service in Agriculture and Home Economics, will be July 28 and July 29.

Monday, July 28: 10 a.m. CST, Assemble at Leo Sly's Sunrise Orchard, $3\frac{1}{2}$ mi. S.E. of Brussels; 12 noon, dinner at St. Mary's School, Brussels; 1:30 p.m., leave for orchards on way to Hardin and packing houses; 7:30 p.m., informal meeting at Pere Marquette Lodge.

Tuesday, July 29: 9 a.m. CST, Trip up the hill at Pere Marquette Park; 10 a.m., leave for Nugent & Schapanski orchards to see orchards, packing house and equipment; lunch at noon and adjourn about 3 p.m.

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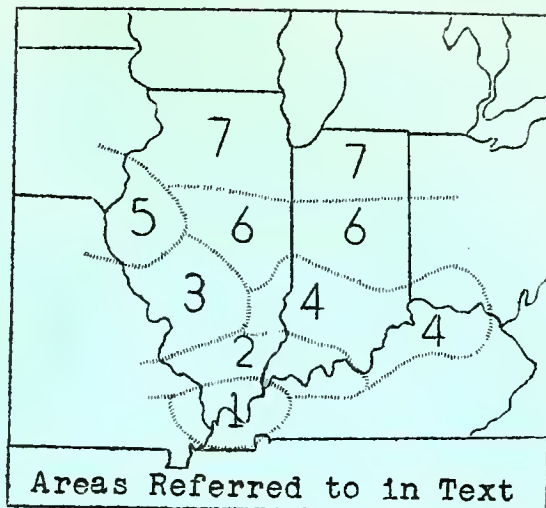
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 18--July 27-August 2, 1947



ANNOUNCER: Here's our weekly spray service report. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station ____.

This is usually the time of year when everything looks dandy from the standpoint of codling moth control. But if you start feeling too good, climb some of the tallest trees and look at the apples up there. Unless you have done an excellent job of top-spraying, you will find the source of later wormy fruit. If you don't find worms in the tops, then go to some remote corner of the orchard where your spray hands may have missed one side of a tree because it meant crawling through a thicket to spray it. If you find such a tree, you will also find worms that will cause plenty of trouble later in the season. Too many of us let the loose ends dangle while we try to struggle with the middle. If you haven't picked up the loose ends before, now is the time to do it.

Area 1 - Western Kentucky and Villa Ridge, Illinois: Curculio numbers are decreasing somewhat after extensive second-brood dusts and sprays. Growers in central and western Kentucky are advised to maintain heavy arsenical cover to within two to three weeks of harvest if curculio numbers are high in their orchards. Where Oriental fruit moths have been abundant in the past on Elberta peaches, it is suggested that a DDT spray be applied three weeks before harvest or two DDT-sulfur dusts at three weeks and 10 days before harvest.

Second-brood codling moth activity continues from western Kentucky to Louisville, and it is thought that hatch will continue through this coming week. In the Fulton and Paducah areas, the peak hatch has passed. Red mites and spiders seem to vary in populations from orchard to orchard. Orchards being treated with DDT should be watched and treated accordingly. Second-brood red-banded leafroller pupae have been found in the Paducah and Mayfield areas, indicating that this pest may cause plenty of trouble later on.

Growers having trouble with bitter rot should be prepared to apply Bordeaux mixture in the problem areas of their orchards. Weekly observations are suggested in order to keep a check on this disease. Pre-harvest sulfur applications should be started on Elberta for brown rot control.

Area 2 - Carbondale and Vincennes: At Vincennes codling moth hatches have fallen off since a week ago, and the peak of second-brood larval hatch should occur as soon as temperatures are normal. Heavy, dashing rains have temporarily improved the mite situation, with populations less than half of what they were a week ago. However, the eggs remain and are hatching rapidly. Nearly mature red-banded leafroller second-brood larvae have been found. Present indications are that this pest may cause considerable damage this season.

At Carbondale curculio adults are still abundant, as shown by jarrings. There is still plenty of time for injury to the fruit, as Elberta harvest is not expected before August 18. So keep enough protection on the fruit. Oriental fruit moth has been found in some early-ripening peaches. Brown rot is appearing on early varieties. Thus frequent applications of sulfur dusts or sprays are advised. Codling-moth second brood is in full swing, as evidenced by many fresh entries. Watch the tops of the trees, as that is where most of the codling moth damage is at present.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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S. C. Chandler reports that although most orchards show little or no mite infestation, two or three orchards in Jackson and Union counties now have serious infestations. Apparently these infestations have taken place within the past two or three days, as there is no bronzing or discoloration of the foliage. It is advisable for growers to examine foliage with a lens in order to be able to apply a miticide before injury takes place if such treatment is warranted.

Area 3 - Belleville-Hardin-Centralia: Curculio continues to increase in numbers over last week. Arsenical applications are suggested at frequent intervals. Oriental fruit moth is scarce at present. Codling moth hatch is quite prevalent, and second-brood sprays are suggested.

Area 4 - Bedford-Lexington-S.W. Ohio: Second-brood moths began emerging at Lexington July 17 and have continued on a small scale since that time. Peak emergence is not expected before the end of this month or early August. Red mites have been reduced by a DN 111 plus DDT spray applied July 17 and 18. A second spray is suggested, starting the week of the 28th.

The peak emergence of curculio adults for the second brood is over, and these insects are prevalent in the orchard. Dissection shows 20 percent of the females with eggs developing. This means that in the Lexington area the month-before-harvest spray is now due.

Area 5 - Pittsfield-Quincy: Second-brood entrances were noticed at Pittsfield July 23. Apparently they were just starting, so a peak may occur the week of the 28th if temperatures are warm. There is no evidence of second-brood hatch in the Quincy area.

Areas 6 and 7 - Champaign-Peoria-Lafayette; Northern Illinois-Indiana: There is very little evidence of fresh codling moth entries at Urbana at this time. Growers still concerned about scab control may continue with reduced amounts of sulfur if oil is not being used. Fermate or Karbam may be used if available. Watch for red-mite development, and apply miticides if necessary. DN 111 and hexaethyl tetraphosphate are suggested miticides, either of which should be used according to the manufacturer's directions.

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Cooperative Extension Work in Agriculture and Home Economics
University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914

The first part of the document discusses the importance of maintaining accurate records of all transactions and the role of the accounting department in ensuring the integrity of the financial statements. It also highlights the need for regular audits and the importance of transparency in financial reporting.

The second part of the document focuses on the internal controls and risk management framework. It describes the various controls in place to prevent fraud and errors, and the process for identifying and mitigating risks. The document also discusses the role of the internal audit function in monitoring the effectiveness of these controls.

The third part of the document provides a detailed overview of the company's financial performance over the past year. It includes a breakdown of revenue, expenses, and profit, as well as a comparison to the budget and previous years. The document also discusses the company's financial position and the outlook for the future.

The fourth part of the document discusses the company's capital structure and financing activities. It provides information on the company's debt and equity, and the terms of any financing arrangements. It also discusses the company's plans for future capital expenditures and financing needs.

The fifth part of the document discusses the company's tax position and the impact of tax on its financial performance. It provides information on the company's tax returns and the various tax credits and deductions available. It also discusses the company's plans for future tax management.

The sixth part of the document discusses the company's compliance with applicable laws and regulations. It provides information on the company's policies and procedures for ensuring compliance, and the results of any recent audits or investigations. It also discusses the company's plans for future compliance efforts.

The seventh part of the document discusses the company's environmental, social, and governance (ESG) performance. It provides information on the company's policies and procedures for managing ESG risks, and the results of any recent assessments or reports. It also discusses the company's plans for future ESG efforts.

The eighth part of the document discusses the company's human resources and compensation policies. It provides information on the company's recruitment and retention strategies, and the results of any recent surveys or studies. It also discusses the company's plans for future human resources efforts.

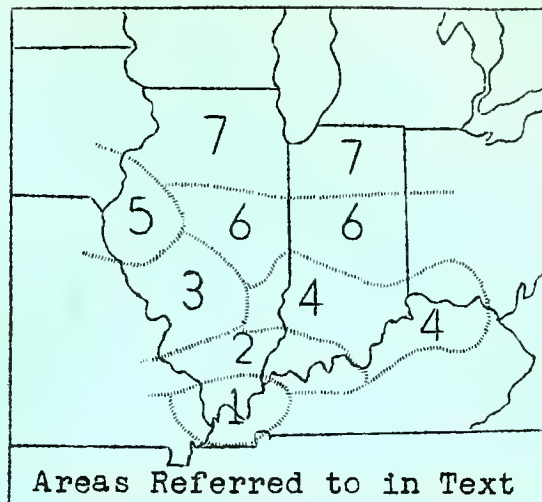
The ninth part of the document discusses the company's intellectual property and technology management. It provides information on the company's policies and procedures for protecting its intellectual property, and the results of any recent assessments or reports. It also discusses the company's plans for future technology management efforts.

The tenth part of the document discusses the company's overall strategy and vision for the future. It provides information on the company's long-term goals and objectives, and the various initiatives and projects in place to achieve them. It also discusses the company's plans for future strategic efforts.

SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 19--August 3 to 9, 1947



ANNOUNCER: Here's our weekly spray service report. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station_____.

It may not be out of place to repeat the warning given in last week's report: Check tops of trees for worms, and note especially any new entrances. Because of the erratic emergence of moths this spring, the second and third broods of codling moth will not be clearly defined, and considerable variation in peak of egg-laying from orchard to orchard may be expected, even within the same general area.

Area 1 - Western Kentucky and Villa Ridge, Illinois: There has been a big reduction in numbers of curculio adults jarred in sprayed orchards in southern Illinois, although the continued presence of sufficient numbers to justify control measures is reported from western Kentucky. In this area females are now laying eggs, and protection against second-brood attack is necessary. Oriental fruit moth has increased in numbers during the past week, and larvae are entering tender twigs and fruits in moderate numbers.

Although the peak of second-brood codling moth activity has passed in this area, adults are still present in most orchards; and sprays for this pest must be continued. Mites and woolly aphids are increasing, and predators are unusually scarce.

More instances of bitter rot on apples have been reported, and growers are warned to keep close watch for the appearance of this disease. Brown rot has been bad on early peaches and probably will be a problem on later varieties. Keep fruit well covered with sulfur dusts.

Area 2 - Carbondale and Vincennes: Peak emergence of curculio adults has passed, but some protection against second-brood attack is imperative in this area. Oriental fruit moth infestation is light in Golden Jubilee peaches now being harvested, but light to moderate infestations are anticipated in the later varieties. Growers are urged to use the recommended sprays and dusts against this pest. For those using DDT, one application now and another a few days before harvest is recommended.

The first mature worms of the second-brood codling moth are leaving the apples at Vincennes, even while fresh entrances from late second brood continue to appear. Third-brood activity is expected to occur between August 20 and 25. As this will be about the time that Elberta harvest starts, growers who have both peaches and apples should plan a codling moth spray before that harvest begins, as a protection against third-brood worms.

Red-banded leafroller damage is light in the Carbondale region, but is building up in the Vincennes area. Some migration of moths from early apples to later varieties can be expected following the harvest of Transparents, Dutchess and Wealthy apples. Lead arsenate is still the best insecticide for the control of this pest.

The two-spotted mite is now definitely increasing throughout Area 2, and European red mite is also showing up in most orchards. Sprays of Dn-111 or hexaethyl tetraphosphate should be applied before actual damage occurs.

Area 3 - Belleville, Hardin, Centralia: Hatch of second-brood

codling moth worms is at its peak in this area. Orchards which have not been sprayed within a week or 10 days should be sprayed now. Mite infestations are generally low in this area, but serious infestations may appear in scattered localities. Some red-banded leaf roller damage is apparent in nearly every orchard, but with few exceptions heavy infestations have not yet occurred. Pear psylla has become serious in most pear orchards, especially those sprayed with DDT. Hexaethyl tetraphosphate offers the greatest promise for the control of this pest.

Area 4 - Bedford-Lexington-S.W. Ohio: Oriental fruit moth

and curculio show promise of making a heavy attack on peaches in the Bedford area. Harvest of Red Haven and Golden Jubilee peaches has begun around Lexington. Brown rot has appeared in these varieties, indicating that sulfur dusts will need to be continued on later varieties.

A spray should be applied to apples now in this section, as adult codling moths are still emerging and new entrances are heavy. Mites are abundant in some orchards, but in the Bedford region populations generally are insignificant.

Areas 5, 6, and 7 - Pittsfield-Quincy; Champaign-Pecoria-Lafayette; northern Illinois and Indiana: Fresh entrances have appeared in apples at Champaign during this past week, and peak hatch throughout most of these areas should occur this coming week. A spray should be applied early in the week of August 3.

Infestations of European red mites are reaching serious proportions in some DDT-sprayed orchards in these areas, and the two-spotted mite is present but not serious in most orchards. Dn-111 sprays should be applied at two or three-week intervals where mites are abundant. If hexaethyl tetraphosphate is used, the best control will result from two applications made one week apart.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory of Vincennes, Indiana. It was compiled by C. J. Weinman, Illinois Natural History Survey, University of Illinois.

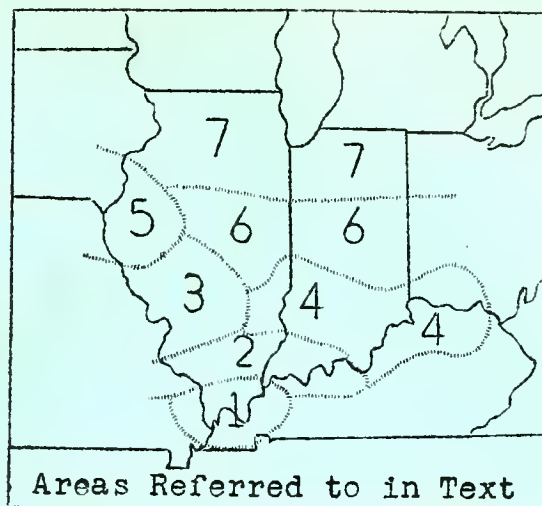
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University of Illinois College of Agriculture and the United States
Department of Agriculture cooperating. H. P. Rusk, Director
Acts approved by Congress May 8 and June 30, 1914



SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 20--August 10 to 16, 1947



ANNOUNCER: Here's our weekly spray service report. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station _____

Area 1 - Western Kentucky and Villa Ridge, Illinois: Some

second-brood codling moth activity is continuing in Kentucky, indicating the need for continued late second-brood protection. Red mites and red spiders seem to be increasing in many DDT-sprayed orchards where miticides have not been applied.

On peaches, curculio numbers are generally lower in western Kentucky, where heavy preharvest arsenate of lead applications have been made. Ripening fruit has few curculio worms to date. In central and northern Kentucky there is still time for preharvest arsenical applications on Elberta peaches where adults are numerous. Some increase in Oriental fruit moth injury to ripening peaches was observed this week. Many western Kentucky growers have applied some DDT in dusts or sprays or both. Recent weather has not favored brown rot, but some can be seen in most Elberta plantings. The usual preharvest precautions should be vigorously maintained.

Area 2 - Carbondale and Vincennes: In this area fresh codling

moth entrances continue in orchards where there was an appreciable first brood. At Vincennes the comparatively high rate of hatch in some orchards will continue for at least another week. At Carbondale it is not likely there will be third-brood hatch before the week of August 18.

Two-spotted spider mites are increasing in a number of orchards in this area. The European red mite is declining in some orchards at Vincennes but is still increasing in others. Several growers have obtained excellent control of this pest with hexaethyl tetraphosphate. Mite predators are now showing up in moderate numbers where no DDT has been used for several weeks.

There is a little increase in red-banded leafrollers in some orchards in this area. Chandler reports a heavy infestation on early apples in a small block following use of DDT from the first cover on. At Vincennes all stages of larvae are present, and there will be no break between broods. Unless parasites effect control, this pest will cause progressively greater damage to fruit from now until harvest.

On peaches there is still further reduction in numbers of plum curculio jarred near Carbondale. The probable date of first picking will be August 18. It is likely that no further poison will be needed in most orchards.

The use of oil dust is recommended to control Oriental fruit moth from now until nearly harvest time. Those who wish to use DDT should do so now. There have been heavy rains in the Carbondale area during the past few days. If the weather gets cooler, with more rain and fruit cracks, more sulfur dusts will be needed to control brown rot.

Area 3 - Belleville, Hardin, Centralia: There has been a very decided drop in curculios jarred at Alma.

Area 4 - Bedford-Lexington-S.W. Ohio: At Bedford codling moth development is now the most rapid of this season, eggs hatching in six days. Lead arsenate is proving rather ineffective with the high temperatures. The hot weather is preventing sizing up of peaches in this area. Sprays for controlling Oriental fruit moth should be applied now. There may be a severe brown rot attack at harvest. The hail of July 27 seriously injured grapes, and black rot is severe.

Area 5 - Pittsfield-Quincy: Grape berry moth was much lighter than normal at this date in the commercial grape section at Nauvoo, as well as in spots where tests in the past two years showed infestations to be highest. Growers in general used more DDT, but that was not the main reason for reduction.

Area 6 - Champaign-Peoria-Lafayette and Area 7 - Northern Illinois and Indiana: In the Moline area and to a lesser extent in the Princeton area European red mites are abundant. Infestations are appreciably heavier where no dormant oil spray was applied. Growers should examine their trees and prepare to use a miticide.

Codling moth second brood will probably not start hatching before August 15. Some blocks do show appreciable infestation for this area.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory of Vincennes, Indiana. It was compiled by C. J. Weinman, Illinois Natural History Survey, University of Illinois

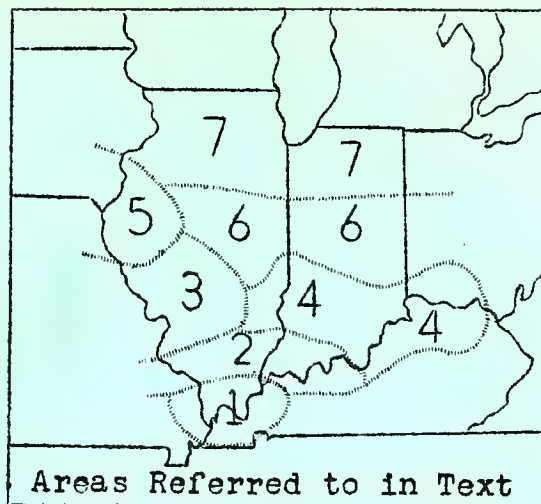
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois

No. 21--August 17-23, 1947



ANNOUNCER: Here's our weekly spray service report. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station _____.

Elberta peach harvest will start in earnest this week of August 15 in most of Kentucky, southern Illinois and Indiana. Oriental fruit moth is light in most areas except in the Henderson, Kentucky and Bedford, Indiana areas where heavy infestations are occurring. Curculio prevalence is variable also throughout the tri-state areas with some southern Illinois and western Kentucky orchards still showing considerable egg-laying adults. Such orchards should probably receive a post-harvest application to help reduce the carry-over for next year. In spite of dry weather in most regions brown rot is still a hazard and should be treated accordingly.

Fall varieties of apples should be watched for development of second-brood codling moth. Heavy hatches were reported last week in western Kentucky and southern Indiana while in Illinois a few fresh entries were observed in some orchards. Apple growers who need to do so should protect their apples before going into the peach harvest. Do not let your apples go too long without protection unless your infestation is low enough that further spraying would be unnecessary. Mite and spider injury is increasing where control measures have not been applied.

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Hexaethyl tetraphosphate seems to be doing a wonderful job on this pest. Bitter rot should be expected any time in problem orchards if it hasn't appeared before now. Be prepared to hormone your apples. Some varieties may drop prematurely in the arid sections.

Above all, pick and market quality fruit.

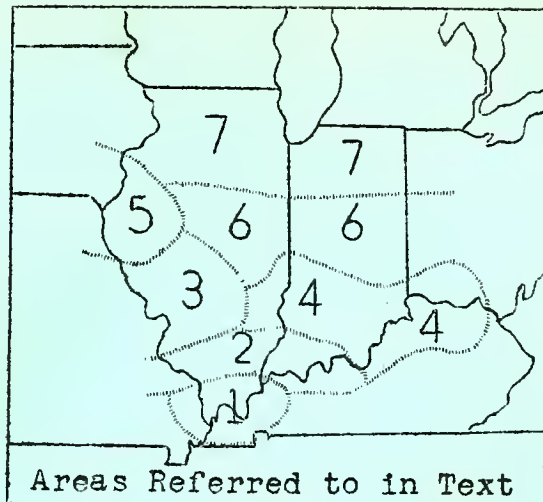
That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the Department of Horticulture, University of Illinois.

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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois No. 22--August 24-31, 1947



ANNOUNCER: Here's our weekly spray service report. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station_____.

Area 1 - Western Kentucky and Villa Ridge, Illinois: Elberta harvest continues, and in general the crop is better than in 1946. Oriental fruit moth attack is occurring and is worse in some orchards than others. Brown rot is serious in orchards where the fruit has been damaged by insects or by cracking. On apples, late second-brood codling moth larvae continue to hatch. Many new entrances were noticed in the Henderson area August 19. No increase in mites was noted over last week.

Area 2 - Carbondale-Vincennes: At Vincennes third-brood codling moth has started, and the attack is in accord with the intensity of the second brood. DDT-sprayed orchards look good so far. Additional sprays will be needed in many orchards. Red-banded leaf-roller is not serious except where straight DDT has been used since the start of the season. In most orchards the European red mite is receding, but infestations of the two-spotted spider mite are increasing. Hibernating forms of the latter are appearing in some orchards at Carbondale. Curculios are still in peach orchards; however, the use of poisons cannot be justifiably recommended. Oriental fruit moth is flaring up and might get worse in the next two weeks. DDT used now might do some good. Recent rains have caused some fruit-cracking. This cracking plus insect damage increases the brown rot hazard. Some orchards showed 15 to 20 percent of

brown rot August 20. Keep fungicides on the fruit until the day of picking. On apples codling moth shows a marked increase in number of new entrances. Apply protection if necessary.

Area 3 - Belleville-Hardin-Centralia: Codling moth hatch continues, and protection is necessary in many orchards. Watch for brown rot development in your peaches, and apply a fungicide dust or spray at least every five days until the fruits are picked.

Area 4 - Bedford-Lexington-S. W. Ohio: A heavy codling moth hatch is taking place and will probably continue for 10 days. Gage Elberta will ripen in about 10 days. Heavy applications should be made for Oriental fruit moth. Grapes are ripening rapidly.

Areas 5, 6 and 7 - Quincy-Pittsfield-Peoria-Champaign-LaFayette-Northern Indiana-Illinois: Some codling moth hatch continues at Urbana. Be prepared for more larval entrances within the next 10 days. The intensity of this late infestation will depend on the degree of early injury.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the Department of Horticulture, University of Illinois.

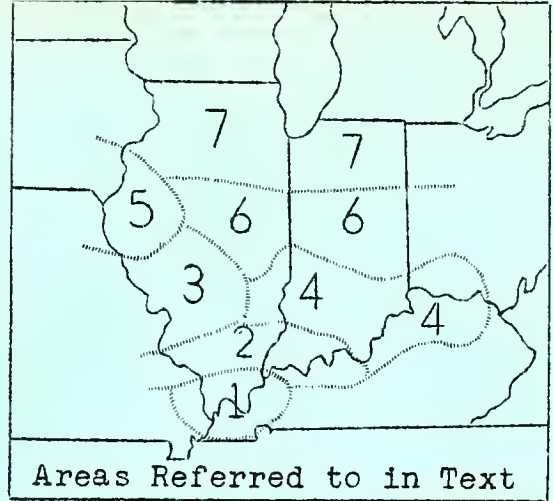
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History Survey and Extension Service in Agriculture and Home Economics, University of Illinois College of Agriculture, Urbana, Illinois



No. 23--August 31 - September 6, 1947

ANNOUNCER: Here's our weekly spray service report. These reports are presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station_____.

Heavy codling moth hatches are occurring in western Kentucky and southern Indiana. Moderate hatch continues in central and southern Illinois. Growers should watch their orchards closely and apply protection if needed. Heavy dropping of some varieties is occurring in drought areas; thus hormone sprays should be applied accordingly. Mites continue to be present, and in the southern areas the two-spotted spider mite predominates.

Peach harvest continues. Brown rot should be controlled until the fruit is in the package. Oriental fruit moth is serious in western Kentucky and southern Indiana, while light to moderate infestations are occurring in southern Illinois. Growers with late apples near peaches should watch for the migration of Oriental fruit moth into the apple orchards after the peaches are picked.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the Department of Horticulture, University of Illinois.

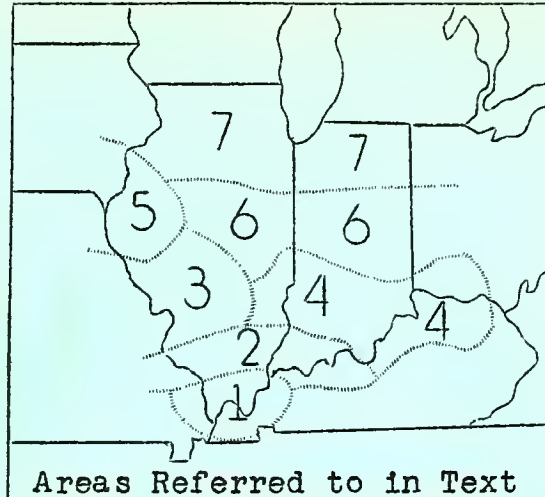
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SPRAY SERVICE REPORT

Prepared by Illinois State Natural History
Survey and Extension Service in Agriculture
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College of Agriculture, Urbana, Illinois



No. 24--September 7 - 13, 1947

ANNOUNCER: Here's our last weekly spray service report for 1947. These reports have been presented through the cooperation of entomologists, pathologists and horticulturists of Illinois, Indiana, Kentucky, Ohio, the U. S. Department of Agriculture and Station_____.

At present many new codling moth worms are hatching over the tri-state area as far north as Champaign-Urbana. This hatch will continue until cool weather occurs, so spraying is suggested if necessary. Jonathans are dropping badly in southern Illinois. Watch your orchards closely and apply hormones at the first indication of premature dropping.

The following men have contributed to the success of the Spray Service Report by reporting on orchard conditions: L. F. Steiner, Bureau of Entomology and Plant Quarantine, Vincennes, Indiana; Prof. C. L. Burkholder, Prof. J. J. Davis, and Dr. G. Edw. Marshall, Indiana Agricultural Experiment Station, Purdue University, Lafayette, Indiana; Dr. W. D. Armstrong and Dr. P. O. Ritcher, Kentucky Agricultural Experiment Station, University of Kentucky, Princeton and Lexington, Kentucky; Prof. T. H. King, Ohio State University, Columbus, Ohio; Department of Entomology, University of Missouri, Columbia, Missouri; Jos. M. Ackles, Griggsville, Ill.; Charles S. Adkins, Jr., Metropolis, Ill.; Fred Baxter, Nauvoo, Ill.; John Bell, Mossley Hill Orchard, Barrington, Ill.; Jim Bright, Valley City, Ill.; W. L. Casper, Cobden, Ill.; S. C. Chandler,

Carbondale, Ill.; Frank Chatten, Quincy, Ill.; Dave Dell, Grafton, Ill.; Curt E. Eckert, Belleville, Ill.; L. A. Floyd, Greenville, Ill.; Davis Foreman, Pittsfield, Ill.; Harry Hatcher, Roodhouse, Ill.; Vilas Hensel, Princeton, Ill.; C. T. Jeffries, Dix, Ill.; Bernard Y. King, Moline, Ill.; John F. Leahr, Griggsville, Ill.; Roy J. Newman, Martinsville, Ill.; Roy Schwartz, Cobden, Ill.; L. M. Smith, Ozark, Ill.; C. E. Walkington, Tunnel Hill, Ill.; and the staffs of the Illinois Natural History Survey and the University of Illinois Department of Horticulture, Urbana, Ill.

Because of mailing regulations, the 1948 spray service reports cannot be sent automatically to recipients of the 1947 reports. Therefore, a letter will be sent in April 1948 to all persons on the 1947 mailing list asking if they wish to receive the 1948 reports. Any inquiries and suggestions concerning the reports should be addressed to the Extension Editor's Office, University of Illinois College of Agriculture, Urbana, Illinois.

That concludes today's spray service report, presented in cooperation with fruit growers and federal and state agencies, including the Agricultural Experiment Stations of Kentucky, Indiana, and Illinois, the Illinois State Natural History Survey and the Federal Deciduous Fruit Insect Laboratory at Vincennes, Indiana. It was compiled by Dwight Powell of the Department of Horticulture, University of Illinois.

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